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TILTON'S JOURNAL OF HORTICULTURE, AND FLORAL MAGAZINE.

VOL. 6.

BOSTON, TILTON, N.H.

TILTON'S JOURNAL

OF

HORTICULTURE

AND

FLORIST'S COMPANION.

VOLUME VI.

BOSTON:
J. E. TILTON AND COMPANY.
1869.

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SPRING-FLOWERING TREES. — THE MAGNOLIAS.

By P. Barry, Rochester, N.Y.

In our Northern climate, where the winters are nearly six months in duration, the flowers of spring have a peculiarly gladdening influence upon those who possess a love for gardens, and especially for trees. It seems to me, too, that, as we grow older, we feel this influence the more. Winters seem longer. Spring seems more tardy in her approach; and the long-looked-for and hoped-for flowers of spring send a thrill of joy to the heart, which, year by year, is, I think, more clearly felt.

With us the Chinese magnolias are the first and the finest of spring-flowering trees.

Since the first of May, they have been expanding their flowers on the leafless branches, until now they are solid masses of flowers.

A group yonder, a single tree here, scattered about the lawn, they are objects of constant admiration, eliciting praises the most extravagant.

The newspapers are making note of them as objects worthy of public attention; and I see mention made this evening of a tree in the garden of

a gentleman of Troy, having *six hundred and twenty-nine* blossoms on it. We have a tree on our lawn here, the head of which is about fifty feet in circumference. To count its flowers would be an almost impossible task: over eight hundred have been counted, and the work given up in despair. It is the variety *Soulangeana*, one of the hardiest and best; flowers are large, full, cup-shaped, white within, deeply stained and marbled with purple outside. *Conspicua* is pure white, fragrant, and beautiful; but, in our climate, does not bloom so profusely as the first-named, owing to some of the flower-buds being injured by winter.

The Chinese name is *Yulan;* it is said to be the parent of the *Soulangeana*, crossed with the *purpurea*, which is called *obovata* by some, and *discolor* by others. It is a dwarf, bushy-growing species, seldom exceeding four or five feet in height; flowers dark purple outside, and white within. *Speciosa* is another variety; flowers smaller than *conspicua* or *Soulangeana;* white, slightly stained with purple outside; very hardy; blooms in great profusion, and so light colored, that it answers all the purpose of a white; much more valuable for our Northern climate than the *conspicua.*

Norbertí, *Lenné*, and *superba* are improvements on *Soulangeana* in the size and darker color of the flowers; but, for general effect, the *Soulangeana* and *speciosa* are the two best among those now generally grown in the nurseries.

All these Chinese magnolias may be propagated from layers; but the finest trees are obtained by budding or grafting them on our native species, the *acuminata.* The finest trees in our grounds, and the finest I have ever seen, are so worked. The French use the *purpurea* as a stock, and propagate mostly by inarching, as we see by the plants sent us; but they are far inferior to ours worked on the *acuminata*, known as the "cucumber-tree," and one of the most majestic and beautiful of our Northern forests.

I understand that the *tripetela*, another of our American species, has been successfully used as a stock; but it cannot be so good as the *acuminata*, for two reasons; *first*, it is not so hardy, being indigenous to our Southern States only; *second*, its habit of growth, at least here in the North, is to send up a succession of shoots from the collar, which cannot be suppressed without shortening the life of the tree.

The magnolias are all rather difficult to transplant with success. I presume that there is scarcely any other genus of which a larger proportion are lost in transplanting.

Our experience is, that if moved just as growth commences, say, from the time the leaves begin to appear until they are *one-fourth grown*, and the roots not allowed to suffer in the least by exposure to the air, success is almost certain. We have moved large plants in full bloom and almost in full leaf, with entire success.

These brief notes are intended to draw the attention of planters to these beautiful spring-flowering trees. Too much cannot be said in their praise.

May 22, 1869.

PEAR-BLOSSOMS.

THE time in which our fruit-trees are in bloom is so short, and comes at a season when so many calls are made upon the orchardist, that the opportunity to study their flowers is but limited. A little observation would probably show the different varieties to be more distinctly marked than is generally supposed ; and a careful examination might afford the means to settle disputed points regarding the identity of varieties.

As such an instance, we may mention, that, some years ago, the question coming up whether the pear commonly known as the Long Green of Duhamel really was the one described by "the always accurate Duhamel," we found, on referring to the description by that author, "that each blossom often has six or seven petals," and, by examining the flowers of the tree in question, we found not only six or seven, but even a greater number of petals ; leaving no doubt that it was correct. This led to the examination of other varieties ; and several, among them the Rostiezer, were found to have generally more than the normal number (five) of petals.

The Beurré Delbecq, Van Mons says, was originally called "Fleur de Mars," because it blossomed in the month of March. It does not bloom as early as that here, but much earlier than most kinds. The flowers of the Beurré Bosc are remarkable for the narrowness of the petals, and for the distance to which the flowers are spread apart in the corymb.

THE ANEMONE.

By Edward S. Rand, Jun., Boston, Mass.

This large and showy family of *Ranunculaceæ* contains many favorite and well-known flowers.

Species are of common occurrence in most regions of the temperate zones, or in the alpine districts of warmer climates, and many are well-known inhabitants of our gardens. Among the first flowers of spring, they are ever welcome, and yet in the many species they tarry with us late into the autumn; and the most elegant flower of October is the white *Anemone japonica*, Honorine Joubert.

The single-flowered varieties have no true petals; but the sepals are often brilliantly colored. The many stamens have a tendency to be converted into petals, and this sometimes happens in the wild state. We have seen flowers of the common wood anemone (*A. nemorosa*) growing in the fields perfectly double, and have known of this also occurring with the wild hepatica (*H. triloba*), a plant forming a sub-genus of anemone.

While our own woods and fields cannot give us the beautiful anemones of Southern Europe, the indigenous species are by no means without beauty. First, the wood anemone (*A. nemorosa*) is one of the earliest flowers of May, and, in congenial situations, fairly carpets the woods with its delicate foliage, spangled with the modest flowers which are often as daintily tinted as some rare seashell. This plant is of easy culture, and, if grown in a rich leaf-mould, will come up in the garden year after year. The only care necessary is not to allow it to dry up. Double flowers are of rare occurrence, but occasionally reward the diligent seeker. Another vernal species sometimes seen in gardens is *Anemone patens* or *pulsatilla* (figured in Gray's Genera, 3), commonly known as "Pasque flower." It is a native of Europe, but is also indigenous to the Western prairies. The flower is dull whitish-purple; sometimes, as often in the European plant, deeper purple, large and spreading, and is very showy. Its mode of growth on a short stem is rather against it, but, after flowering, the stem lengthens; and the long feathery tails of seed are often more ornamental than the flower.

Our other indigenous species are *A. Caroliniana* and *parviflora*, Southern and Western species with white flowers; *A. multifida* (figured Torr. New York, 2), *cylindrica*, *Virginiana* (figured Hook. Bot. Am. 4), and *Pennsylvanica* (Hook. Bot. Am. 3, and Gray Gen. 4), all summer bloomers, of taller growth, with white flowers.

Of these, *A. Pennsylvanica* is the most showy, and is a beautiful garden plant, succeeding in any good garden-soil, and always giving a profusion of bloom. Closely allied to, and, in fact, only a sub-genus of, anemone, is the hepatica, commonly called "Liver-leaf" or "Squirrel-cups," a flower which challenges the Epigæa as the earliest blossom of the spring. This in the single wild state is very showy, and well worthy cultivation; and in the double varieties is one of the most showy of our spring flowers. Although the double blue and red varieties have long been in our garden, it is only within a few weeks that the fact of a double hepatica having been found wild has been brought to our knowledge. These plants need no care except to be planted in a good garden-soil, and to be let alone. They are impatient of removal; but, if allowed to form large clumps, will in early spring be a dazzling mass of color. The varieties are red in many shades, and blue: a double white was a few years since in cultivation in England, but is supposed now to be lost. *H. angulosa*, a species from Hungary, with large single bright-blue starry flowers and elegant foliage, has bloomed with us the two last years, and proves perfectly hardy, and is a great acquisition. It is well figured in "The Floral Magazine," plate 247. Of our native species, *Hepatica triloba* is the same as the European: *H. acutiloba* has pointed lobes and more sepals, but is only desirable for variety or of special interest botanically. The sub-genus *Pulsatilla* is only represented in this country by the species *patens*, to which we have already referred, and which is also a native of Siberia. Europe furnishes us many very fine species, all of which are well worthy of cultivation, but which are seldom seen in our gardens. *P. vernalis* (Sweet, Fl. Garden, 205), a native of Switzerland, has very large white flowers, which spring from a close tuft of leaves, and are very showy in early spring. Its hardiness with us is somewhat questionable. *P. vulgaris* is perfectly hardy, and is not uncommon in gardens. The flowers are dark dingy-purple, covered with long silky hairs, but are not very showy. *P. alpina* is a very variable species, producing showy

white flowers, which are often double. There are other species of rare occurrence.

Of the true anemones, the best known of the European species is the

ANEMONE FULGENS.

red-flowered single *Roman* (so called), which covers the fields of Italy and Southern France, and which is so often called a poppy by travellers. This species is *A. stellata* or *hortensis*, or, perhaps more generally, *A. coronaria* in

some of its varieties, and is easily grown with us if protected during the winter by a cold frame, but is not hardy enough to live in the open ground.

A brilliant variety of this species called *fulgens* has lately attracted much attention in England.

Anemone palmata (Bot. Reg. 3, 200, and Lodd. Cab. 175) is a very fine species with golden-yellow flowers, but is not hardy, and requires frame protection in winter. *A. appenina* (Eng. Bot. 15, t. 1062) has flowers of a clear brilliant blue. Although a native of Italy, it is hardy, and has stood the winter with us for the last four years in the open border.

A. ranunculoides (Lodd. Cab. 566), is an English species resembling our wood anemone, except that the flowers are bright yellow.

A. sylvestris (Bot. Mag. 2, 54, and Lodd. Cab. 1739), a native of Germany, has elegant white flowers.

A. vitifolia (Bot. Reg. 14, t. 1385, and Bot. Mag. 62, t. 3376) is a tall-growing species with large, showy white flowers. It is a native of Nepal, and has been an inhabitant of our gardens for the last forty years. It is, however, rarely met with, although easily multiplied by division or by seed.

One of the most charming of the family is the European *A. narcissiflora* (Bot. Mag. 28, t. 1120), which produces umbels of white or cream-colored flowers in May. It is a very elegant plant, and is perfectly hardy, requiring only common garden-culture.

A. japonica (Pax. Mag. 14, 25; Bot. Reg. 31, t. 66; and Bot. Mag. 73, 4341) is one of the best of the family, and in its variety Honorine Joubert is unequalled in beauty by any garden-plant.

It is an autumn bloomer, and seldom expands its flowers before the first of October. The flowers of the species are pinkish, or rather purplish-red, very large, but somewhat loose in appearance. In the garden, they produce a fine effect, and will stand a frost without injury.

The variety has white flowers, large, regular, and even, with clear yellow centre; it is of taller growth than the species, and for a mass in the flower-garden is unsurpassed for autumn decoration. The foliage is very ornamental, and the flowers retain their beauty far into the autumn. We do not know the origin of this variety, except that it was produced in France. From its characteristics, we should judge it to be a hybrid between *A. viti-*

folia and *A. japonica;* retaining all the beauty of flower of the former, all the hardiness of the latter, and improving upon both in foliage.

If we were limited to half a dozen hardy plants, this variety would be one of the first to be selected.

There are many other species, all, however, rare in cultivation; and space will allow us to mention but one more, the species from which (with *A. stellata*) all our florist's anemones originate. *A. coronaria* is a native of Italy, Greece, and generally of the South of Europe. The flowers are very variable in color; being blue, red, pink, white, scarlet, purple, or striped. The roots are small, knobby tubers, of most unpromising appearance. They are annually imported in the autumn in large quantities by our seedsmen, from Holland or England, and should be planted as soon as possible after their arrival. None of the varieties will survive the winter in the open ground, but do well if covered with a frame. The best way to prepare a bed is to dig it out about eighteen inches deep, fill in six inches of well-rotted cow-dung, and over this about a foot of good sandy loam, raising the bed slightly above the surface of the adjoining ground. Plant the tubers in drills about two inches deep and four inches apart, setting each one in sharp sand to prevent rotting.

As the winter approaches, put the frame over the bed, fill in with dry leaves, draw on the sash, and leave all until April. Early in April remove the leaves, give light and plenty of air in good weather, and, if the soil become dry, copious waterings after the plants appear above ground. The flowers will come out in May or early in June. After bloom is over, withhold all water, and, when the foliage has withered, take up the tubers, and keep them in a dry place until the time for planting again comes round. The same tubers may be planted year after year. Plants are easily raised from seed, and seedlings bloom the second year. The seed should be sown in a frame as soon as ripe; but it often will not come up until the following spring.

To all lovers of flowers we say, Grow anemones; the hardy species are eminently satisfactory, and the more tender will repay by their brilliant blossoms the little care required to bring them to perfection.

Glen Ridge, 1869.

POTATOES AT THE WEST.

By M. L. Dunlap, Champaign, Ill.

The new full-fledged hobby at the present time is new seedling potatoes; and, of these, early varieties are in most demand. We have been gradually approaching the crisis for the past dozen years: in fact, the disease had its origin in the Rohan, in the infant days of other agricultural and horticultural humbugs; and it now gives promise of being the richest placer in the whole list. Brobdignag strawberries, clusters of grapes more magnificent than those from the Valley of Eshcol, and other like wonders, have become stale beside the new potatoes.

The Rohan sold at fifty cents a tuber; but now we go three dollars a pound, or a hundred and eighty dollars a bushel, and scarce at that; "demand beyond the supply." This is decidedly ahead of a hundred guineas for a tulip, of which only half a dozen could be produced in a season, or five dollars for a plant of the celestial *Morus multicaulis*. The Early Rose (no rose can possibly be so good under any other name) has gone down to the low price of three pounds for two dollars, and is evidently so disgusted therewith, that it has gone back on its originators full two weeks on its advertised time of maturity. We cannot, therefore, cap the "climax" short of three dollars a pound.

Leaving humbug and badinage aside, we may profitably spend a short time in looking over the potato horizon. Naturally, the potato delights in a cool, moist climate, and in a soil filled with humus; artificially, we must grow it under very different conditions of both climate and soil.

To succeed best, we must study those natural conditions under which it attains the best results. Varieties are important only in this connection of adaptation to these conditions. In our dry atmosphere and dryer soil, subject to long-continued droughts, in which the soil becomes an impalpable powder, we do not succeed well with the potato; that is, the crop is not a reliable one, though at times giving us the best results of a New-England crop, but then again almost a failure. We suffer little by the rot, but mainly from the long heated terms that arrest the summer growth.

South of forty degrees of latitude, the potato is generally of poor quality,

aside from the uncertainty of the crop; and, unless the seed comes from the North, the quality continues to deteriorate, and, in a few years, becomes worthless; the heat giving them the quality of those tubers where the rains have washed the earth from the hills, and exposed the root to the rays of the sun. Such potatoes are unhealthy, insipid, and worthless for food; leathery and sodden in texture; and wanting in the essentials of a good potato grown under more favorable conditions.

Here, our winters are mild, followed by a long rainy season before planting, or the time that we usually plant, potatoes. It is a very general rule with us to plant after we are done with the corn, or seldom before that crop has had considerable attention; and then plant such varieties as best suit the more northern sections. We act as though a variety that would mature at the North must certainly do so in our longer seasons; but we do not take into consideration that the season is divided, that the potato only makes a good growth during the rainy months of spring and the cool days of autumn. Here is where we commit the first error, in not planting sufficiently early for our early-maturing varieties to mature before the long, hot days of summer; and then, again, to plant the latter part of June, so that the greater part of the growth may be completed in the cool days of autumn. We thus have two short seasons instead of one long one: for this reason, it is advisable to plant quick-maturing varieties, and at two periods; one for summer, and one for autumn and winter use.

In case of a cool, moist summer, all late-maturing sorts, like the Peach-blow, produce good crops; for nothing occurs to arrest the growth: but these seasons are exceptional, not the rule.

There are conditions of art that will in part compensate for those of Nature, and with their aid we may add a greater certainty of success. In the south part of this State and Missouri, straw has been used with very satisfactory results, by increasing the quantity and improving the quality.

The ground is prepared in the usual way, and the seed receives a very slight covering of earth; is harrowed and rolled, and then covered with straw four to six inches deep. No further attention is required until the time of harvesting. A coating of leaves or prairie hay will answer a good purpose. Last year, I mulched or top-dressed half an acre that had been planted in June, using half-rotted barnyard manure for the purpose. The

result was eighty bushels of fine potatoes, after the potato-beetles had stripped off nearly all the leaves, seriously checking the growth; and from which it would not have recovered but for the stimulating effects of the mulching, keeping the soil moist. A field-crop planted at the same time yielded thirty bushels. No weeds were allowed on either patch.

But as straw, leaves, and manure are not always at hand, we should pursue that system of culture that will give us the best results.

The plan that I have pursued for several years with early potatoes, and the one, that, thus far, has been the most satisfactory, is as follows: Land that has had one crop after breaking the sward, what we call second sod, or the second crop, is ploughed deep, say seven to eight inches, rolled, marked off with a one-horse plough, three feet wide, the sets, of one eye each, dropped ten inches apart, and covered with a sulky two-horse cultivator. This will cover them two to three inches deep. In this condition, the land is left until the plants begin to appear above ground, when no time is to be lost in putting on the two-horse harrow, and giving the whole surface a thorough harrowing. This will kill all the young weeds, without disturbing the potato-sets. The roller is again passed over the field. The surface is now finely comminuted, the air and heat is absorbed, and, in a very few days, the plants are up, so that they may be worked with the two-horse sulky cultivator, having the two inside shares adjusted to throw the earth towards the plants; at the same time, the shield must be used to keep off sods, and lumps of earth, and small stones, if there should be any. A shield made of rods is the best; for that will allow the fine earth to pass through, and exclude the larger particles. The crop is worked weekly in this way; gradually hilling up until in bloom, when the hills must not be disturbed. To keep the weeds down between the rows, a double-shovel plough, drawn by a single horse, is used, and the weeds are to be cut out of the hills with a sharp hoe, or pulled by hand. Usually, the heavy growth of tops will keep the hills clear of weeds, if justice is done between the rows. Deep, clean culture between the rows, after blooming, is useful, for it supplies moisture by capillary attraction in dry weather, and acts as a drain in case of heavy rains.

The June planting is managed in a similar manner; but the mulching will be found useful in a majority of cases, and especially if the season is dry.

A word or two in regard to varieties. This is a matter, to some extent, of locality, and therefore no well-established rules can be laid down. Thus far, none of the Goodrich Seedlings have given us satisfaction. The late ones, like Garnet Chili, Harrison, and Pink Eye Rusty Coat for the reason stated; and the others are less valuable than Early York, which is the best early and late-keeping potato that I know of for this locality. It has been supposed that the Buckeye is identical; but I think there is a Buckeye that is not the true Early York. The Mercer is liable to rot, but is otherwise a valuable variety. The Early Manley has done well, and is largely grown under the name of Mountain Sprout. Sebec, Matthews's Early, and an innumerable list of new varieties, have been tested from time to time, and discarded. Once in five or six years, I prefer to procure seed from points north, either Michigan, Wisconsin, or Minnesota. In those States, the late-growing varieties are the most popular; and of these the Peachblow takes the lead in the Chicago market.

I have no objection to people amusing themselves with new varieties at fabulous prices; but, in the end, they will find that it does not pay; better go slow, and let those new varieties have a careful trial, and, if found valuable, it will be time to put them into general use.

THE HARRISON POTATO.

We believe there are few of the new sorts more productive than the Harrison. Looking over the prize crops of the potato for 1868, we find, in many instances, the Harrison to be the kind under cultivation. With us, it proved nearly as productive as the Early Rose, though the quantity of seed employed was, of course, much greater. If the soil is naturally strong, and in good condition, we do not doubt six hundred bushels, and upwards, may be easily obtained from an acre. The tubers are of good size and form, white and handsome. So great is the yield, that it is particularly desirable for agricultural purposes, and its attractive appearance makes it salable in the market. We think, however, that it will prove more liable to disease than many other kinds; and we consider the quality below the standard required in a good table potato.

LILIUM LONGIFLORUM.

By Francis Parkman, Jamaica Plain, Mass.

The long-flowered Japan lily (*Lilium longiflorum*) is tolerably well known, yet not so well as it deserves to be. Its pure-white flowers, eight

Lilium Longiflorum.

or ten inches long, and shaped like a trumpet, are as beautiful, or nearly so, as those of the common garden lily. The bulbs are rather small, and

every year they produce a quantity of offsets, which, in two or three seasons, become flowering-bulbs in their turn. They are tolerably hardy; but, in a very wet soil, they should be carefully protected; or, rather, the soil in which they are planted should always be well drained in the first place. They will bear to be planted six inches and even a foot in depth; and they are then safer, as they are less exposed to alternations of frost and thaw. Common garden soil, enriched with old manure, and lightened with sand, if it is too dense and heavy, suits them perfectly. Like most lilies, however, they are grateful for an admixture of peat or leaf-mould. Plant in autumn, five or six inches apart, and protect the bulbs with a covering of tan or dry leaves. The shoots will show themselves early in May; and in June the bed will be covered with deep-green glistening foliage and superb white flowers. These lilies are cheap, as they multiply rapidly; and a dozen or more of them is no very rash purchase for anybody.

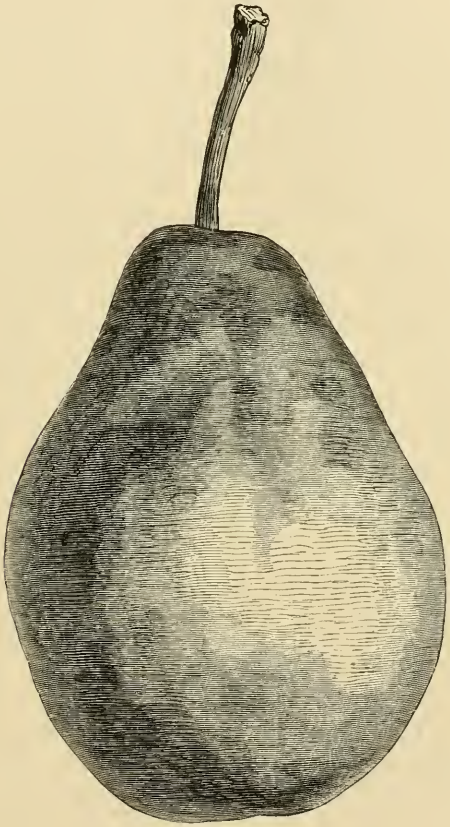
They will grow as well in pots as in the open ground, or better; and are perfectly adapted for "forcing." The compost used should be of loam, decayed cow-manure, peat, leaf-mould, and sand, well mixed. Besides *Lilium longiflorum*, there are several varieties, or allied species, closely resembling it. *Lilium eximium* is a little larger, but apparently not quite so hardy. The variety called *Liu Kiu* differs only in a prolongation of the lower petal, which destroys the symmetry of the trumpet-shaped flower. *Lilium Takesima* is large and vigorous, with a dark purplish stem; that of the others being light green. Unlike *Lilium longiflorum*, it bears seed freely, and is thus an inviting subject for the hybridist.

SOUVENIR D'ESPEREN PEAR.

By Marshall P. Wilder, President American Pomological Society.

Size above medium; form obovate, obtuse-pyriform, inclined to oval, somewhat angular; surface a little irregular; calyx closed, but little sunk; stem long, set without depression; skin dull iron-russet on a clear green ground, becoming yellowish at maturity; flesh tender, melting, juicy, buttery, slightly granulous near the core; flavor sweet, rich, with a nutlike aro-

ma; season, November to December; keeps well until ripe, when it soon decays; quality "very good;" core medium; seeds small, plump, light-brown; tree healthy and hardy; foliage dark green, persistent through the season.



Souvenir d'Esperen Pear.

This pear is one of the modern Belgian varieties, originated about twenty years since, and dedicated to the memory of the late Major Esperen.

WARDIAN CASES.—No. I.

INTRODUCTORY.

By James L. Little, Jun., Boston, Mass.

There are two classes of people in the civilized portion of this globe, that are fond of flowers. The first and by far the largest class comprises those who have an *actual* love for flowers, and who take an interest in watching the growth and development of the plant, from an inborn taste for such things. Such people, we find, are, in many instances, those of moderate means, and the really poor. The second class comprises those who are fond of flowers to a certain extent. They are pleased with a handsome bouquet; they *admire* a finely-shaped plant, or, in short, any plant or flower really showy or attractive to the eye. In many instances (I am sorry to say it), I have seen plants of variegated foliage, or others in full bloom, placed in conspicuous positions in houses, not so much for the love of their great natural beauty, but to give an idea of *expense*. Such people, who have these faults, may be seen at large horticultural exhibitions, going into raptures over fine specimens of greenhouse plants, caladiums and gloxinias, for instance, or the variegated plants, which are so handsome; but none of these were intended to be placed in the *dry air* of our rooms, where so much dust is constantly settling on their leaves and closing the pores, impeding their free circulation. These people belong to the class that are *excited*, not instructed, by such sights. They rush out and purchase a handsome flower-stand, generally of gigantic dimensions, which in itself is a wonderful piece of cabinet-work; then it is filled with the *most delicate* varieties of *ferns*, a few pretty vines, some showy caladiums, ivies sprinkled into every available space: and here is a picture which will need to be restored as badly, in about a fortnight's time, as some of the oil paintings that have been in existence hundreds of years. After a few experiments of this kind, which are generally paid for very dearly, the flower-stand is either put away in the attic, or converted into a cart by the children, or a pond to sail their boats in. Such is the unhappy end of these attempts to keep flowers because your neighbor does, or your window looks bare and *unfurnished*. On the other hand, how much we learn as we pass

the window of some *poor* woman, who cannot afford to have these fine stands and shelves for plants. She has some plants of geranium and ivy, the former *almost always* in bloom, the latter always green and fresh, and growing wonderfully. If we enter, we find a small room, and order and neatness such as they can be under the circumstances: six or seven children are in the room; some on the floor, and some "packed away" where they won't obstruct the limited means of travel. Every thing is crowded into this small apartment, and usually quite conspicuous is a good-sized cooking-stove. Why, with all these occupants, and this latter article, should these plants flourish so? The secret is simply this: the plants selected (whether by accident or preference) were adapted to the air of the room; and, as plants absorb the gases which are injurious to man, the large number of human beings in proportion to the size of the room seems to explain another part of the secret of the growth of these plants. It is not necessary to put six or eight persons into a small room to make *similar plants grow:* this instance or illustration is not cited to show such to be an *essential to success.* We are apt to take things *too* literally. The selection of plants of a *proper* kind, adapted to the *temperature*, size, and *situation* of rooms, is the *important* point. Now, such rules and directions cannot be laid down to a nicety; and *some* people will always fail in their attempts to grow window-plants: but to such as are really fond of plants, and can see in Nature the beauties and wonders alike of plant or flower, I would say, There is a method of growing plants of *certain kinds*, in which the temperature of the room, the question of over-watering, or insects, are not known or considered, provided certain *simple* and *essential* points are kept constantly in view. To this method I would like to call the attention of those who have been, are, or will be, interested in it. To such I would say, There is no reason for failure, nor can there be any. The subject of Wardian cases is one which cannot fail to awaken an interest in all alike, whether it be those of us who have succeeded or failed in making them what they ought to be. They are the *solution* of the question, "What plants shall I grow in my window?" I hope, in a future number, to give some directions for constructing, stocking, and managing Wardian cases.

BOSTON, December, 1868.

(To be continued.)

CULTIVATION OF THE CURRANT.

By "Bismarck."

Although the currant is one of our most common fruits, found in every garden, it is one of the most valuable. It is only adapted to northern climates; and I doubt whether, among the small fruits of the warmer regions, any fruit can be found to take the place of the currant with its refreshing juice, any more than oranges can take the place of apples. Much more care is now given to its cultivation than formerly, yet the bushes are not seldom left, after being planted, to take their chance, which too often proves to be neglect. But since the time saved in gathering fine large clusters of fruit, as compared with that spent in picking the little bunches which we frequently see, will compensate the grower for the trouble of properly cultivating and pruning his bushes, the extra price obtained for fine specimens will be so much gained; and therefore it is clearly his interest to produce a crop of the highest quality.

The natural habit of the currant is to form a bush by sending up suckers from the collar, as may be seen by examining seedling plants, which invariably show this disposition. It may, however, be prevented in raising plants from cuttings; and, while plants so grown are preferable in some respects, those allowed to take the natural form have the advantage in others. Those grown with clean stems are much more easily pruned, and the ground is more easily cultivated; and only these are admissible in small gardens, where neatness is an object: but for large market plantations, the bushes are preferable, as producing a larger quantity of fruit, and enduring longer, being continually renewed from suckers. But proper pruning and neat cultivation is very difficult, or, indeed, impossible, in this method, as the shoots cannot be cut out clean when they have their origin below the ground, and, if not cut clean, there will probably be two to be cut out the next season instead of one: so that before long, the bush becomes a bunch of stems, with, very likely, grass growing up amongst them, forming a safe retreat for insects; and the fruit gradually diminishes in size. A modification of this method is to train up from three to six of the best shoots, cutting away all the others as clean as possible. Let each one of

these develop into a bearing bush, keeping the top properly thinned, and whenever one loses its vigor, cut it out, and replace it with a new shoot trained up from the bottom ; thus obtaining constant-bearing bushes without the trouble of wholly renewing the plantation.

Currants are wholly propagated by cuttings of good, sound, one-year-old wood, from six to twelve inches in length. If plants with clean stems are wanted, the eyes or buds, with the exception of about three at the top, should be removed ; not rubbed off, but cut out clean, so as to remove all the latent eyes at their base, which would otherwise produce suckers ; but if the plants are to be grown as bushes, this is unnecessary. The cuttings being ready, a piece of ground (any good soil will answer, but if moist and rich it will be better) should be dug deeply and fine, and the cuttings stuck down about two-thirds of their length, in straight rows about fifteen inches apart, and three or four inches apart in the rows. If mulched with spent tan, as they should be to retain the moisture of the ground, hardly a cutting will fail ; and they will need little or no care in weeding, or, indeed, in any way, until they are ready to plant in their final situations. The cuttings can be stuck down more easily if cut square at the base with pruning-shears than if slanted with a knife. They may be taken off and planted early in autumn, with a mulch to protect them during the winter, or they may be heeled-in temporarily, and planted in spring. Or, if more convenient, they may be taken off early in spring, and prepared in the house on a rainy day, and then placed in a cool cellar until the ground is ready for planting. In a rich soil, they will be large enough to transplant in one year ; but if not sufficiently large, they may remain in the nursery-bed two years. Four feet apart each way is a good distance to plant the bushes. They may be set in autumn or early in spring : if in autumn, the roots should be protected by mulching. The best soil is a rich loam, rather heavy than light. It should be abundantly manured with any good manure. If single stems, they ought to be headed-down to the point at which it is desired that they should branch, which need not be more than eight inches from the ground. If already branched, the shoots may be shortened to about the same length, observing to cut to an outside bud. From three to six branches may be allowed the first year, and double the number the second year. A few fruit-buds are produced at the base of the last year's wood ; but most of the fruit is borne on spurs

on the older wood. The best fruit is produced on the wood of two or three years' growth; and therefore the object in pruning should be to retain as much of this wood as possible, at the same time bringing in young wood to replace that which, having become old and unproductive, or producing only inferior fruit, is to be cut away. This is all the pruning that will be required, except thinning the wood when too crowded. In cutting out young wood where too thick, it is best to leave the fruit-buds at the base of the shoot, as they will afterwards develop into spurs, and produce abundantly. The branches should, however, be shortened so as not to allow the bush to become too spreading or ill balanced.

Before the fruit ripens, some hay or straw should be spread for the fruit on the lower branches to rest upon; for the bush cannot be trained so high that these branches will not rest on the ground when heavily loaded. Mulching will not only save the currants from injury, but, by keeping the ground moist, it will cause them to grow to a larger size. The fruit should never be gathered when wet either with dew or rain, as it is not so sweet, and will not keep as well, as if picked when dry. After a heavy rain, some of the berries are found to have absorbed so much water as to burst open.

No varieties have yet been produced superior in quality to the Red and White Dutch; and, when well grown, there is nothing much better in any respect. Among the many new names there are few that are really distinct. The Cherry has a very large but acid berry; and the Versailles, which is, on the whole, the most desirable of the new red currants, is hardly equal in quality to the Red Dutch, though, from its larger size, it brings a higher price in the market. The White Grape is larger and handsomer than the White Dutch, but not quite so sweet.

It was the opinion of Mr. Knight, gathered from his experience in raising new varieties of fruit from seed, that the currant would first become sweet and then insipid by repeated growth from seed; but this opinion has not been borne out by the varieties lately introduced, which, as observed above, are more acid than the older kinds. This should not, however, deter us from the attempt to raise sweeter varieties by sowing seed, either carefully selected or hybridized. The seed may be sown thinly in drills as soon as cleaned from the pulp; in which case the ground must have slight mulching, or it may be buried in a cool place, and sown in spring; but this must be done very early, before it is sprouted.

There are but few insects injurious to the currant; but the different species of borers which eat out the pith from the shoots would seem to have much increased of late. The parent of these borers is a small wasp-like moth, having transparent wings with a band of black at the tips. About the middle of June, they lay their eggs near the buds, and from them a small white worm is hatched in a few days, which eats its way into the wood. These moths, though generally very active, become torpid in the cool of the day, when they may be taken on the under side of the leaves. In winter or early spring, the bushes should be examined: the shoots having borers will appear brownish or wilted, and less vigorous than others; and, by examining closely, the little hole where the worm entered can be found. All such shoots must be destroyed; and, in making cuttings, they should be examined for borers. The currant-worm and the gooseberry saw-fly, which eat the foliage, may be destroyed by watering with water with which powdered white hellebore has been mixed in the proportion of half an ounce of the powder to three quarts of water. The proper time for applying it is from the 25th of May to the 5th of June.

LEANING TREES.

Often in a fine orchard we find one or more trees leaning over so far as to destroy the beauty of the whole orchard. It is also much more difficult to cultivate around a leaning tree. This may easily be remedied, while the trees are young, by partially digging up and replanting the tree. The roots will usually be found smallest on the side *from* which the tree leans; and therefore these roots should be loosened from the earth, the tree set in a perpendicular position, and carefully fastened by stakes or guys, and the earth replaced around the roots. It would be well to add some rich compost to promote their growth. If, as is very probable, the top of the tree has become one-sided, it should be pruned so as to restore the balance. In this way we have "righted up" pear-trees six inches through the stem; but the best way is to look after the young trees, and not permit them to depart from the way of uprightness.

HILLSIDE GREENHOUSES.

By Robert Manning, Salem, Mass.

Our attention has lately been drawn to a new plan of building greenhouses, which appears to possess such advantages over any thing previously known, that we cannot doubt it is destined to work a revolution in greenhouse culture, especially in the business of propagating and forcing plants, for which it is particularly intended. We refer to the greenhouse erected the last season by Mr. Strong, at his nurseries at Nonantum Hill, Brighton, the result of one of those happy ideas which are such obvious improvements over previous plans, that every one wonders why he has not thought of them before. Such ideas, however, come only as the result of long-continued and patient labor and thought.

Having had the pleasure of visiting and examining this house, we believe Mr. Strong has not overrated its merits, and now lay before the readers of this Journal the results of our visit.

One of the latest favorites among the different methods of building propagating houses is that known as the ridge and furrow system, which consists in placing several small houses side by side, with span-roofs on the same level. Mr. Strong has placed his houses on the side of a hill, each one rising above the preceding, and furnished with a roof slightly hipped on the back side, the hip being covered with a wooden ventilator instead of glass. The sashes rest on the ridgepole at the top, and, at the bottom, on the edge of the gutters, which are provided for the purpose of receiving the snow and water falling on the roof. The other edge of the gutter supports the lower part of the hip of the house next below; and the gutters are themselves supported by a row of cedar posts, which take the place of the partition walls in houses as ordinarily constructed. The rafters, being intended rather to stiffen the ridgepole than to support the sashes, are few and slender, offering no obstruction to the light. The outer walls are of stone laid in mortar, and banked with earth; so that the house forms, as it were, an immense pit. The number of houses, or what would be separate houses were the partitions whole, is seven, each one sixty-five feet long and about fourteen feet wide; the dimensions of the whole being sixty-five by

ninety-three feet, covering about one-seventh of an acre. The glass slopes at an angle of twenty-three degrees.

The heating apparatus at the lower part is of the simplest character, consisting of a square brick furnace, the top of the fireplace being formed by a semicircular iron arch. The fireplace is provided with a damper, which gives a direct or return draught, at pleasure. The smoke-flue is formed of cement pipes, carried up under one of the walks, following the slope of the house, and, about half-way up, carried outside the wall to a short upright chimney of the same materials. Above the fireplace, the brickwork is carried up so as to form a hot-air chamber ; and from this, two hot-air flues slope up, and terminate at about half the distance up (or across) the house. At the same height as the termination of the hot-air flues commences a cold-air flue, which takes the cold air to the furnace at the bottom of the house.

Provision for watering is made by a cistern above the house, from which pipes are led, having a stopcock at each of the upper sections, from the last of which a hose conducts the water over the remaining part, so that the whole house can be showered in fifteen or twenty minutes.

The first and greatest advantage of this method of building is the equal diffusion of the heat in all parts of the house ; several thermometers placed in different parts indicating no greater difference than two degrees between the warmest and coolest parts. This equable heat has hitherto been attained only by means of expensive hot-water heating apparatus, and even then less perfectly than by the cheap and simple hot-air furnace described above.

The second point gained is the saving in fuel ; only thirteen tons of coal having been put into this house in autumn, and a part of this having been left over in spring : while a house of the same area with this, of ordinary construction, and with such heating apparatus as is commonly used, will consume about five times this quantity. It will be seen at once, that, besides the economy in the coal-bill, the saving of labor in handling such a quantity of coal is a not unimportant item.

Another advantage, which Mr. Strong deems very great, is, that no light is lost in the front of the houses ; this part being generally deemed, in houses of the common construction, of but little value : but here the rays

of the sun, passing through the upper part of the roof of one house, and between the posts which support the gutters, give a full supply of light where the shadow of the front wall would otherwise fall, and color the foliage and flowers, as well as cause the wood to ripen.

The cheapness with which such a house can be constructed is a great gain; Mr. Strong's having cost him, when complete, but two thousand dollars. At this rate, an acre could be covered over at a cost of fourteen or fifteen thousand dollars.

It is proper to state, however, that the stones for the end walls and other parts were found on the estate, and only the cost of hauling charged to the house, while much of the work was done by the nursery-hands, under Mr. Strong's supervision, at much less expense than if mechanics had been hired. Mr. Strong estimated that the cost, where all materials were purchased, and the labor specially hired, might range from twenty-five to fifty per cent more. The walls at the sides of the walks, confining the earth in which the plants were growing, were many of them made of concrete, formed by placing two boards upright at proper distance apart, filling between with stones, and pouring into the interstices a liquid cement. When sufficiently dry, the boards are removed, and the surface smoothed with a trowel, making a wall much superior to brick, at less than half the cost.

The labor of taking care of the house is very slight. Of course, it would depend greatly upon the crop grown; but Mr. Strong believes, that, if filled with lettuce, for which it is admirably adapted, one man could do all the work in two such houses, covering more than a quarter of an acre of ground, with perfect ease.

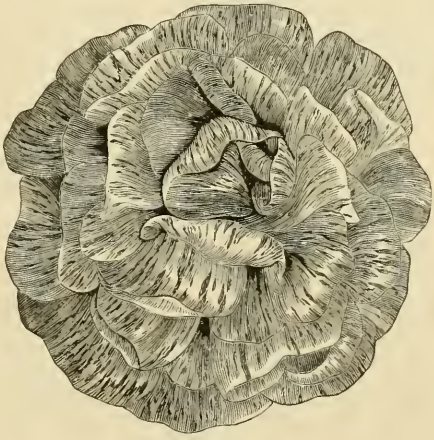
In conclusion, we may say, that, so well satisfied is Mr. Strong with his house, he intends to build another, still larger, on the hillside immediately adjoining.

The readers of "The Journal of Horticulture" will recollect the account, in the January number, of Mr. Strong's unprecedented success in propagating the Early Rose Potato, by which more than eighty bushels were produced from six pounds of seed; and a much larger quantity would have been raised but for the unfavorable weather. He is engaged, the present season, in multiplying the new varieties of potatoes with the same extraordinary rapidity; but the descriptions of this and many other interesting operations we must defer to a future occasion.

DOUBLE BALSAM. — *Impat.ens balsamina.*

By Joseph Breck, Ex-President of the Massachusetts Horticultural Society.

The garden-balsam is one of the old denizens of the flower-garden, and not one of the most desirable, as it appeared in its single state in olden time. It was generally known as the "touch-me-not," on account of the seed-vessels, which, when they are nearly mature, open with a spring, upon the touch, and scatter their seeds in every direction. They found a place in the flower-garden more on account of this novelty than for the beauty of their flowers, which, in their unimproved state, were any thing but orna-



Solferino Balsam.

mental, especially as they were generally huddled together in the garden. They produced seed in great abundance, which is very different with the camellia, and rose-flowered, which give it very sparingly: sometimes it is with difficulty a single capsule can be found on a large plant, and, even in these, not more than three or four seeds that are perfect. The seed of the balsam is improved by age, and will retain its vitality for eight years or more; gardeners alleging that the older the seed the better, if it will vegetate, as it will produce more double flowers.

Although the flowers of the balsam cannot be used in bouquets, yet, for

masses or single plants in the garden, the improved sorts of the present day are very desirable, producing a succession of bloom from July to October, unless cut down by severe frost in September. They will endure a

Camellia-Spotted Balsam.

slight frost; but the balsam is denominated a tender annual. The spikes of flowers, when in full bloom, in all their delicate colors, constitute a most

desirable and gorgeous ornament for the centre-table or mantel-piece ; or the flowers, when arranged in flat dishes, with a little water, are much prized, and present a beautiful appearance.

The soil for the balsam should be deep and rich ; and, if planted eighteen inches apart, they will make a solid mass of bloom ; and, when the various brilliant and delicate colors are planted together, the effect is truly grand.

To have the plants in perfection, and a longer period of bloom, they should be started in a hot-bed or cold grapery in March or April : they will then be strong enough, by the first of June, to be transplanted where they are to remain. Balsams are divided into various classes ; viz., improved rose balsams, double camellia-flowered, dwarf rose balsams, and double tall balsams. They are of many colors, as crimson, scarlet, purple, violet, rose, white, flesh-color, which are plain, or what are termed "self," or one color ; then there are those that are blotched and striped, of various colors, and spotted, as purple-spotted, rose-spotted, scarlet-spotted, crimson-spotted.

The cut on the previous page represents the camellia-spotted balsam in its perfected state, and is not exaggerated in its size or perfection over many that I have raised myself, although such flowers cannot be expected as a general thing.

The class of dwarf balsams do not grow over a foot high, and do not produce flowers so full and double as the rose and camellia varieties, but full and bushy in habit, of all colors ; some of them beautifully striped or parti-colored, sometimes producing two or more distinct colors on the same plant. They should be planted in a bed by themselves. Single plants grown in strong soil will attain the height of three feet, with numerous lateral branches, forming a large bushy head, truly magnificent to behold.

THE MOONSEED.

This indigenous climber (*Menispermum Canadense*) is a very ornamental plant. Of rapid growth, attractive in foliage, flower, or fruit, it is too little known. Its freedom from the attacks of insects is an additional recommendation.

DISCREPANCIES OF STRAWBERRY-CULTURE.

The first settlers on this continent, no matter on what portion of it they made a landing, invariably discovered the strawberry growing in the woods and clearings. The range of country in which it flourished is wider than that of any other edible fruit. It perfects its luscious berries as far north as Lapland, and spreads all through South America. Its faculty of adaptation to all climates and all varieties of soil is therefore really marvellous. It has, no doubt, been thus extensively provided by Providence because of its exceeding healthfulness as food for man. Of the eleven species of the strawberry, six originated in this country; and here, in quantity and quality, the production far exceeds all other countries. To the masses of European poverty it is a forbidden fruit; for their ill-paid labor barely supplies them with bread. But with us, notwithstanding a uniform level of high prices and a paper-currency, it is a feast at which the boot-black and the newsboy sit down with the sturdy relish of a vagrant independence. Nothing less than a chronic scarcity there, and a steady annual abundance here, could produce so striking a contrast as this.

As our women have been dependent on European invention for the contour and diameter of their skirts and the invisibility of their bonnets, so did the American horticulturist look across the ocean during many years for new varieties of the strawberry. They came to us in numbers from Belgium, France, and England. Some of these were rare to look upon, and luscious to the palate; but not being native, nor to the manner of our climate born, they were found to possess no commercial value, and now flourish only in the garden of the amateur. Such, no doubt, will be the fate of the new foreign varieties which continue to be imported. They cannot compete in hardiness and productiveness with our native seedlings. This important fact being ascertained, our horticulturists have been encouraged to abandon all from abroad, and to originate reliable ones for themselves. Some of the pioneer originators accomplished really great results. Hovey's Seedling was an uncontested triumph. Wilson's Albany, as a market-fruit, has never been exceeded for profitableness. The former, while yielding great results on particular soils, did not continuously succeed

on others. But the Albany Seedling has maintained its high character as a market-berry wherever it has been planted. In its wonderful faculty of adaptation to all soils and all climates, it resembles the wild berry of the Laplanders, and the prolific native from which the Minnesota Indians annually gather such quantities of fruit as to astonish the whites for whom they collect it. But it is only as a commercial product, as the berry for the million of unsophisticated consumers, that the Wilson is referred to. The epicurean will utterly reject it.

A new era seems to be opening on us with the discovery and dissemination of the "President Wilder," in which all the conditions required by the market-gardener and the amateur appear to be combined. It comes before the public so vouched for as to inspire full confidence in its value. It has been well tested, and has not been found wanting. There have been instances in which the advent of a new horticultural variety has established an era in the art. This long-cultivated pet of Col. Wilder may open a fresh one in strawberry-culture. Should it take kindly to the multiplicity of soils on which it is sure to be speedily planted, it will be likely to supersede a multitude of contemporary novelties, and take its place among the few varieties everywhere recognized as standards for the field and garden. Its advent, moreover, is a sure evidence of domestic progress. Great as the "President Wilder" may be, it points to something even greater hereafter. Mr. Boyden is reported as having said, that, with twenty years' cultivation, he can produce strawberries as large as pine-apples, warranted to retain all the flavor of the fruit. His faith, therefore, in what the future will accomplish, is so abounding, that others may be excused for being hopeful of what is to come.

With this experience of the strawberry, now extending over two centuries, one would think that Americans should by this time have placed the art of cultivating it among the exact sciences. They have thus elevated both Indian corn and the potato, — two products which the continental pioneers first discovered when they landed here, and now grown up into staples so commanding, that, if blotted out of existence, entire communities would experience a like calamity. But the history of strawberry-culture during the past twenty years, when most attention has been given to it, is crowded with discrepancies and contradictions which it seems impossible

to reconcile. Although men of the highest horticultural attainments have in different locations, and without concert, applied their utmost skill to the production of fruit as a market-crop, the common result has been far from uniform. One has had the highest success ; but another has signally failed. In some cases, the vicissitudes of the season have been sufficient to account for the latter ; but, in others, none were experienced. Nay, two parties adopting an identical method of culture, having like soil, a like season, and like varieties, have had very different success. Sometimes the man whose beds were matted with weeds of a previous season's growth has gathered an abundant crop, when his careful neighbor, who eschewed weeds, came out with only half the quantity. On the other hand, the random cultivator, as he may be styled, has ploughed under a stiff sod, planted strawberries, run over the ground occasionally with the cultivator, using no manure, and yet has gathered successive crops so large as to surprise his neighbors and himself.

These discrepancies are of record in all the agricultural journals during the past twenty years. Every year produces more of them, because there appears to be no royal road to successful strawberry-culture. One cultivator, Mr. Barry of Rochester, from five-eighths of an acre, picked, last summer, five thousand eight hundred and forty-two quarts. The previous year's crop was the first, and yielded five hundred quarts. A timothy sod was turned under, and the (Wilson) plants set out without manuring eighteen inches each way, and the runners kept off. The ground was kept clean, and a thin covering of straw applied during the winter. No cultivation could be simpler than this, nor could the result have been reasonably expected to be better. Yet even greater returns have been realized by others. The strawberry-growers around Boston have sometimes exceeded that of Mr. Barry. Mr. Pardee asserts that strawberries can be grown at a cost of half a dollar the bushel, and Mr. Brown of Connecticut has sold over thirteen hundred dollars' worth from an acre ; yet the great growers of this fruit near Baltimore, who cultivate from fifty to a hundred acres of it, realize only about a hundred dollars per acre. Mr. Pardee does not consider any crop a good one unless it amounts to a hundred bushels per acre, and believes only thirty is considered a good crop round New York. He says that rich land will produce vines ; but it will not profitably pro-

duce fruit. Yet all over New Jersey, where the strawberry-crop is a staple, barnyard-manure is used upon it in immense quantities. He says that the idea of the strawberry requiring rich land has cost the country millions of dollars. The Oneida Community one year obtained a hundred and fifty-six bushels per acre, and only forty-six the next. In 1867, the average in this vicinity was only forty-nine bushels per acre.

One might fill a volume with discrepancies even more irreconcilable than the foregoing. It would seem clear that there is no common standard of practice which all can work up to with assurance of success. This fact is somewhat extraordinary, when we consider, that, for two hundred years, our people have been familiar with the strawberry, and, for the last twenty or thirty of them, have been resolutely bent on finding out the best method for producing a sure and large crop. The conflict of opinion shows itself at every turn, and embraces every detail of variety, soil, manure, or no manure, mode of planting, whether in hills or beds, &c. ; but it is certainly not to be deprecated. It may be confusing to some of us ; but it doubtless does all more good than harm. Some sparks of truth have been struck out in the heats of controversy, which have been useful to the observant mind.

But in this horticultural chaos two facts stand out so prominently, that the dullest seeker after truth will hardly fail to notice them. One is, that, in all cases, the smallest strawberry-bed yields the greatest relative quantity of fruit. To this rule there seems to be no exception. Every little garden-patch is reported as producing a great crop ; one square rod affording sufficient for family use. One amateur thus obtained ninety quarts from that extent of ground, or at the rate of four hundred and fifty bushels per acre. Others, in innumerable instances, came close up to these figures ; but, in every case, the yield far exceeded the very highest average obtained in field-culture. The gains from a small area were so uniformly large, as to clearly prove that we thoroughly understand strawberry-culture ; yet, when our knowledge is extended to field-culture, this uniformity of success disappears. It is, therefore, not from lack of knowledge that we fail, but by reason of an excessive greediness. We grasp after too much. We plant too much land to strawberries ; and in the slipshod care we give to it lies the cause of a thousand discrepancies. The only common and safe stand-

ard for us to work up to is that of cultivating a moderate surface, and then attending to it as thoroughly as if it were only a square rod.

The other notable fact is, that, notwithstanding the alleged uncertain returns from field-culture, the cultivation of strawberries increases annually. If it were not a profitable business, it would be speedily abandoned; for Americans incontinently drop a thing when it ceases to pay. On the contrary, probably no small fruit has yielded a higher average profit for ten years past. It may be that grapes in particular localities, and having six to eight years' growth, have done better; but eight years of strawberries will be found to pay more than eight of grapes. The outlay on the latter will be large in time and interest; but the strawberry gives returns so quickly, that time and interest are of no account. The key to a uniform success is, either to plant a smaller area, or to cultivate a ten-acre field exactly as we do a single rod. *Edmund Morris.*

Burlington, N.J.

A NEW WHITE VERBENA.

Mr. Wellwood Young, for many years gardener to the late James Arnold of New Bedford, has had under cultivation for several years a very beautiful white verbena, a seedling of his own raising, which he has neither named nor distributed up to the present season. This year, however, he has put a few cuttings in the hands of an amateur, for propagation; and we shall soon have a very valuable addition to our list of white verbenas in this new seedling, which has been named Mrs. Merrick.

J. M. M., Jun.

CRITIQUE ON THE JUNE NUMBER. — I am glad to hear from the young pomologists of the West. They have a soil and climate to grow magnificent pears in Southern Illinois. I have seen the fruit; and the growers are justly proud of it. But, in that favored climate, there are some obstacles that much-abused New England is free from; and I think, that, in the long-run, they will lose more trees by winter-killing there than here. So it is of double importance to select such as are hardy; and Mr. Earle has done a good thing in telling us which ones they are. But what has been the cost to him of the information compressed into two pages which can be read in five minutes! Let those who read and profit by them, think of that.

Double zinnias are indeed an acquisition, and no flower-garden should be without them. We commend them, and give them the additional merit of keeping well in water in the house, preserving their beauty for weeks.

Influence of Stock on Graft. — That the stock has an influence on the graft and fruit, I think there can be no question. So many instances have occurred in my experience, that I consider it an established fact. Some years ago, I grafted a large apple-tree — a natural, very early, and very perishable variety — with the common English Russet, than which there is probably no better keeper to be found in the whole catalogue of our winter apples, not excepting the Golden Russet or Roxbury Russet. The fruit produced by this union, however, decayed almost as early in the season as that of the parent stock, and was really worthless, except for the cider-heap, to which, year after year, it was regularly consigned. But, Mr. Editor, I would like to ask you if the influence would have been the same in degree, had the grafts been inserted while the stock was still young; say of three or four years' growth?

The Emile d'Heyst Pear, which Mr. Wilder presents to us, is "one of the *élite*." There are few pears with such a "clean," pure flavor, and which are in eating so long; never decaying at the core.

Parlor Plants, No. IV., introduces us to the old-fashioned wax-plant, pittosporum, fuchsia, and heliotrope; all good and easily grown. I believe in plants for the house, those which every one may grow, and value such far more than the costly novelties which only the few can have, and fewer still can keep. Why not tell us about ferns as parlor-plants? In England, they are grown very successfully; but my query is, What species shall we grow? A leaf out of your book, Mr. Rand, if you do not wholly despise "flowerless" plants.

Cider and Cider-Manufacture. — Sound, practical, and well written. It must do something towards reform, though I believe, since attention has been more particularly called to the subject, that improvement has been steadily going on. We are more careful in the selection of varieties for the purpose, more particular as respects the condition of the fruit, more attentive to the character and purity of our casks or packages, and, in all respects, neater in the manufacture, than we were twenty or thirty years ago. Depend upon it, Mr. Editor, the juice of the apple will one day compete with the juice of the grape, and "the coming man shall drink it." But I would like to ask whether "A. H." has tested the permanganate of potassa, which is recommended by the chemists as a certain purifier of the mustiest barrel.

A Mammoth Quince indeed! If quinces grow in the rich river-bottoms of the West to the size and shape of pumpkins, pray tell us what kind of looking objects the pumpkins are.

Keeping pears is a subject upon which we need more light, if we do upon any thing; for, at present, we hardly have a winter pear, by which I mean a pear that can be kept to midwinter without special care. The Easter Beurré may answer to that description where it succeeds; but that is not in New England. When a man raises a pear which will ripen gradually through December, January, and February, in every season, with the same care as good cultivators give to their apples, and which possesses the other qualities that go to make a good pear, it will be his own fault if he does not make a fortune from it. But, until such a pear comes, we want to know every thing about keeping and ripening what we have already.

Roses again, and a fine illustration. I like roses, though the slugs eat the foliage, and the bugs devour the flowers. They twine around our door-posts, and give us, on hot summer evenings, the delicious odor of whale-oil soap, with which two or three times a week they must be syringed. Why does every winged and creeping thing attack the rose? Was it so in the good old times? or have the insects increased from the destruction of the birds that made them their natural food? Tell us, Were our ancestors' roses eaten up, branch, leaves, and flowers? or are we only raising new and splendid varieties to give ourselves "double, double toil and trouble," to get a perfect flower from them?

Draining Flower-Pots. — Good. There is an old saying, "What is sauce for the goose is sauce for the gander;" all very true as long as your bird is of either kind: but goose-gravy is not good with roast-beef, and chickens stuffed with

onions would shock the sensibilities of any good housewife. So, Mr. Veitch, your conclusion that we must drain or not drain, according to the nature of soil, or as experience has shown to be best, is eminently safe, and no less true. Experience is the best teacher: the shield may have a golden and a silver side; then why should we couch our lances because we do not see with our neighbor's eyes, or pot our plants with the same soil as some esteemed correspondent who grows his flowers hundreds of miles from our little garden?

Bresee's Seedling Potato No. 4, or, the "King of the Earlies," is well illustrated. Claiming to be the earliest and best, this new variety steps boldly into the arena, and, fearless of opposition, bids defiance to the Early Rose, and the *world!* Which shall be victorious a few weeks will determine.

From an extract in the Journal with regard to American Seedling Potatoes in England, it appears this variety put our English friends in ecstasies. "So far as appearance goes, Bresee's King of the Earlies is a tuber to see once and dream of forever"! So, then, Mr. Editor, size, color, and a fine form, have their influence, even in a potato.

Lobelia Cardinalis. — A good article, to the point, and calling attention to one of our most charming indigenous plants. The cardinal flower grows well in the garden, and is worth every care. Try it, ye who run crazy after "novelties," and, if all your importations give you a flower which will compare with it in color, why, send me a specimen, and I will apologize, and take to "novelties." Till then, commend me to our woodlands, our fields, and meadows.

Akebia quinata, a charming climber, which has proved hardy, and flowered abundantly the present year. I saw a plant at a friend's, which, though only two years planted, was a picture of beauty.

The report of the Fruit Committee of the Massachusetts Horticultural Society is a summary of the season and fruit-crop of 1868, especially the novelties, which should be carefully read by every fruit-grower. I think it is not too much to say, that, if this society did nothing more than to give annually to the public such a paper as this of Mr. Strong's, it would be worth keeping up for that alone. *Bismarck.*

The Stark Apple. — The decision of the Committee of the American Pomological Society, that the Stark is only the same as the old Pennock, seems to be very generally questioned. I saw the specimens exhibited at New York, and thought it distinct from the Pennock, but did not feel like putting my opinion against that of the large majority of the committee. I have long known the Pennock: it has a coarse, woody fibre, while the Stark appeared to be quite fine grained. *R. M.*

At the last meeting of the State Pomological Society of Kansas, a committee was appointed to collect and exhibit Kansas fruits at the session of the American Pomological Society in September next. A memorial having been presented to the State legislature for a grant of five hundred dollars to aid in the above-named object, the appropriation was cheerfully and promptly made, so that we may expect that the Kansas column in the catalogue of the National Society will not long remain in its present starless condition.

The President Wilder Strawberry. — A perusal of your offer, in the June number of "The Journal of Horticulture," to give, in the spring of 1870, six plants of the Wilder Strawberry to those who renew their subscriptions by the 1st of January next, and having been a successful cultivator of that delicious fruit, on a small scale, for many years, have induced me to offer your readers some of my thoughts on the subject.

Every one of your subscribers should renew, without the extra inducement of a gift. I have on my table all the numbers from Jan. 1, 1867, and believe no amateur who wishes to adorn a small yard with beautiful flowers, and annually feast upon the choicest fruits, can afford to be without your superior work. Then the plants, which will be worth a year's subscription, may be reckoned a precious gift, from which each should try to obtain an invaluable stock as soon as possible.

Now, the question to be determined in the mind of each subscriber, is, whether two plants next September will be worth as much as six the following spring. I think not. If I had an abundance of plants, and wished to cultivate them in hills, then would I as soon take September as May. But this seems to be a very different case. Each one will first be interested in the increase of plants, by means of runners. Fruit must be a secondary consideration for one or two years, at least.

Will strawberry-plants set as many runners, when planted about the first of May, as if the transplanting had been done the September before? If they will, then the six plants must be worth three times as much as the two; and I prefer taking the six, from which more runners may be obtained by October, 1870, than any one can get from two plants set in September, 1869.

To obtain the best results, I would have the soil pulverized the coming fall, and turn it again before planting. No weeds nor spears of grass should be allowed to grow among the plants until the runners begin to root, about the first of July; after which, both plants and weeds should remain undisturbed. By the first of August, when it is generally very hot and dry, I prefer a thrifty growth of purslain and fox-tail, so that the tender runners can creep along in the shade, and find abundant moisture near the surface of the soil for their delicate rootlets.

No clover, blue-grass, or other perennials, should be permitted on a new strawberry-plant. But any thing which will be killed by the winter, and fall down over the young plants, serves as a good mulch, not liable to be scattered by the winds. I have found hundreds of the later runners well rooted in the spring, under this kind of cover, which showed no sign of roots on the approach of the previous winter. And nothing can serve a better purpose than the haum thus made of winter-killed annuals to keep the ripening fruit free from sand. I would, therefore, advise all, who, like myself, desire a good stock of the Wilder, at the earliest possible date, to renew their subscriptions to your excellent Journal, and accept six plants in the spring of 1870. *James Millesan.*

Shelbyville, Ind., June 17, 1869.

[We cannot agree with our correspondent in regard to permitting even annual weeds to grow in strawberry-beds. The idea of keeping the ground moist by shading with weeds may look very plausible; but it is not considered that the

aggregate leaf-surface, from which evaporation is continually going on, is much greater than the surface of the ground. We advise keeping the ground free of weeds, and the surface well loosened, so as to give the young runners a chance to root immediately, of course avoiding any disturbance of those already rooted. — *Ed.*]

American Wines. — It is a good while since John Bull asked, "Who reads an American book?" but, though that question has been answered, there may be persons on both sides of the Atlantic ready to ask, "Who drinks American wines?" and we have the fullest faith that the latter question will receive as satisfactory an answer as the former, and the inquirers will be as effectually silenced. It is not to be denied that much wine of inferior quality has been made in this country, which has caused much prejudice against native wines; and another obstacle which they have had to encounter is, that manufacturers of native wines have been sometimes guilty of selling spurious articles. This, however, proves that there are good native wines; for nobody ever thinks of counterfeiting a worthless article.

Among the best American wines are the sparkling wines of Messrs. Ryckman, Day, & Co., of Brocton, N.Y., of which we were particularly pleased with the "Diamond Wedding" brand. We shall give in a future number some account of their establishment and operations. The Urbana Wine Company of Hammondsport, also, give the greatest care to the manufacture of their wines; and we think their "Imperial" unusually free from the objection of too much sweetness, which is apt to be a fault of American wines.

We have a few statistics of the business of the latter company, which will give an idea of the rapid expansion of the wine manufacture in this country. They commenced in 1866, and have made a specialty of sparkling wines, having bottled in that year twenty thousand bottles; in 1867, forty thousand bottles; and in 1868, seventy thousand bottles: and they have ordered a hundred thousand bottles for filling the present season. Ten years ago, there were less than a hundred acres of grapes in that region, and now there are about four thousand, nearly one-half of which are in bearing. The principal progress has been made within the last five years.

We need only allude to the Longworth Wine-house at Cincinnati, which is well known as the pioneer in the manufacture of American wines. There is no part of our country better adapted to the grape than Missouri; and, among the enthusiastic grape-growers and wine-makers of that State, one of the most enthusiastic is Mr. Husmann of Hermann. We thought one of his white wines made from the Herbemont Grape the best of that class that we have ever had the pleasure of tasting.

"Can't afford it." — This is the answer too often given by nursery-men, when asked to subscribe to a horticultural journal. It is impossible for us to understand how any intelligent nursery-man can make such an answer; for, in years of experience in this business, we have never seen the time when we could afford to do without one. A progressive, intelligent nursery-man is known at

once by the magazines and newspapers, which keep him posted in regard to every novelty in the horticultural world, whether in plants, trees, or methods of cultivation ; while he who fails to learn from these sources the improvements in his business is equally certain to be behindhand in the race. Nursery-men should be interested in horticultural journals, and in promoting their circulation, not only from the direct benefits derived from them, but because that among them are found the best customers for their seeds and plants.

Among the subscribers to " The Journal of Horticulture " are thousands of the most enthusiastic amateurs in the United States, who all want to buy the new plants which they see described in its pages, which is but another way of saying that they are ready to be customers to some nursery-man ; and the more readers such journals have, the more customers has the nursery-man. But how is the nursery-man to profit by his new customers unless he also has read of the new plants, so as to obtain them, and propagate them for sale ?

The objection that they "can't afford it" is never made by such men as Peter Henderson, Ellwanger & Barry, and Charles Downing; and it is a source of much gratification to us that the last-named eminent pomologist was the first subscriber to " The Journal of Horticulture." Men of this stamp subscribe to horticultural journals, and *pay for them*, because they know they cannot afford to be without them ; while another class of men send us a two or three dollar advertisement, and think it strange that we object to throw in a year's subscription to the magazine.

Another reason for refusing to take a horticultural periodical, often given, is, "no time to read ;" and we know there are many nursery-men whose time is so much taken up with physical labor, that they really think they have no time for reading. Here, again, they mistake their true interest ; for the activity of mind produced by coming in contact with the best horticultural writers, and the information gained, will convince any one who will try, that they are well worth the money and time spent in buying and reading them. So we urge all the nursery-men who are not already subscribers to horticultural journals to begin at once and take them all ; but if they are determined that they will have but one, of course we should recommend our own first ; but we say, " By all means take some one," for we know, that the more other horticultural journals are read, the more our own will be.

Origin of Cultivated Varieties. — We have always thought that a great deal of the difficulty of referring species, either of fruit-trees or any other cultivated plant, to their wild original, was owing to the length of time during which they have been cultivated, which has given opportunity for new conditions to produce an alteration in their characters, or perhaps to confirm some accidental variation which has first led man to appropriate to his use some exceptionally fine or useful plant. — *Gardener's Chronicle.*

Pears in Devon. — We have received some unusually large specimens of pears, grown by Mr. John Garland, gardener to Sir T. Dyke Acland, Bart., at Killerton, near Exeter. The largest is an Easter Beurré, measuring thirteen and a quarter inches in circumference the long way over the stalk and eye (but, of course, not including the stalk), and thirteen inches round the girth, and weighing twenty and a quarter ounces. It had begun to pass, and had lost three-quarters of an ounce; Mr. Garland having weighed it twenty-one ounces. Glout Morceau is twelve and a half inches in its long circumference, and eleven and a half in girth; weighing sixteen and a half ounces. Beurré de Rance is thirteen inches in its long circumference, and ten and a half in girth; weight thirteen ounces. Winter Nelis is ten inches in its long circumference, and nine and a half in girth; weight eight ounces. These are large specimens; and unfortunately, in the case of the Easter Beurré and Glout Morceau, decay at the core had begun, so that their true flavor could not be judged of. Beurré de Rance is not yet ripe; but Winter Nelis was in the highest degree in fine condition as regards texture of flesh and richness of flavor. We have received from Mr. Garland the following communication relating to these: —

"Winter Nelis and Beurré de Rance I planted ten years since, side by side, on a wall having a southern aspect. Both are on the quince-stock. Easter Beurré and Glout Morceau I planted side by side on a wall with a western aspect. Both are on the pear-stock.

"The soil is a heavy loam of good quality; it being the top spit of an old pasture, such as is generally known as first-rate melon-soil by gardeners. No manure has been used except to mulch the trees the first year after planting. The garden is perfectly drained by Nature, being situated at the base and to the south of a hill of volcanic origin, the top of which, generally known in this neighborhood as Killerton Clump, was planted by the present Mr. Veitch's grandfather. The hill is composed of solid rock, which is within twelve or eighteen inches of the surface.

"The branches of each tree are trained horizontally from a central stem, three courses of bricks being the distance between the branches. Two years after planting, I obtained four and five branches on each side in a season by notching the central stem close above the bud I wished to break; cutting deepest, or half through, above the lowest buds, the next notch above being less deep, and the next proportionately less. The two top buds were not notched above, as they were certain to break freely. By the above method, the growth of the branches was very evenly regulated. At the end of the fourth year after planting, the branches had reached the top of the wall, or as near the top as they could be trained; there being fourteen on each side of the centre stem, and every two being exactly opposite each other, or along the same joint of brickwork.

"Every year since the above period, with the exception of Glout Morceau in 1866, the trees have all borne good crops of fruit. Winter Nelis bears so freely, that I am obliged to thin the fruit every year to encourage growth at the points of the branches. This season, the crop has been very heavy, and is also very fine. I consider it the best pear of its season, it being so richly flavored, and

so free a bearer. You saw the fruit of it and Doyenné du Comice, which I exhibited at South Kensington, on the 17th of November.

"The tree of Doyenné du Comice I planted at the same time as the others; viz., ten years ago. It is growing as a pyramid in a border of the kitchen garden: its height is sixteen feet; it is ten feet through, and six inches in diameter at the base of the stem, and is on the quince-stock. It grows freely, forms a handsome pyramid, but is a very moderate bearer. I gather four or five times as much fruit from the tree of Winter Nelis I mentioned, as I gather from Doyenné du Comice. The fruit of Winter Nelis has the advantage of lasting much longer in season than that of Doyenné du Comice: the latter, however, is a first-rate pear, generally ripe by the middle of November, and lasts a fortnight in season. The first fruit I exhibited of it was at the Devon and Exeter Horticultural Society's Show, on the 11th of November, 1864, in the class for any sort; and it obtained the second prize. Until then, it was quite unknown in this neighborhood.

"The following are the weights of individual pears grown here this season: —

	OUNCES.		OUNCES.
Beurré Clairgeau	20½	Van Mons Léon le Clerc	14½
Easter Beurré	21	Chaumontel	14
Glout Morceau	15½	Beurré de Rance	13½
Doyenné du Comice	15½	Winter Nelis	8½

"The Easter Beurré is the same as I have sent, but it is not quite so heavy now. JOHN GARLAND, *Killerton Gardens.*

"P. S. — At a monthly meeting of the members of the Devon and Exeter Horticultural Society and their gardeners, J. Somer, Esq., exhibited six pears of Uvedale's St. Germain, weighing fourteen and a half pounds. The same gentleman told me he had twenty-four of the same sort, which weighed forty-eight pounds. He resides in this parish, Broadclyst." — *Journal of Horticulture and Cottage Gardener.*

MORE ABOUT THE NAOMI RASPBERRY. — The communication of my friend G. W. Campbell, in last month's Journal, was, no doubt, intended as a fair presentation of the adverse side of the Naomi question; but inasmuch as it casts unjust reflections upon myself and a committee of which I am secretary, and also contains several errors in regard to facts of interest to the public, I offer a few words in reply.

Referring to the investigations of the committee of the State Horticultural Society last summer, Mr. Campbell says, the plants found in a private garden on Euclid Street, and which had been bought as *Red Antwerp*, "were declared by the experts to be true Naomi beyond doubt or question." Now, as secretary, I was careful to note down all the "declarations" of the committee, whether expressed formally or otherwise; and I can assert positively, that no such decision or declaration was made in regard to the raspberries referred to; though it is true there was found so close a resemblance between them and the so-called Naomi as to make it difficult, if not impossible, for members of the committee (who did not claim to be "experts") to distinguish them. Subsequent observations have made it quite plain that the plants referred to are *Franconia.* They

were purchased of a nursery-man who generally procured such stock from Eastern establishments, and, like most others in the trade, would not hesitate to sell Franconia for Red Antwerp, when the latter was called for and was not on hand; especially as the former is a better variety of the same class and color. The gardener told us explicitly that the plants were not deemed hardy, and he covered them every winter; while all who claimed to have the Naomi assured us the plants were perfectly hardy, and never had protection.

Mr. Campbell is also mistaken in his recollection of the remarks of Mr. Elliott at the annual meeting of the Horticultural Society. Having carefully taken notes at the time, I am sure he did not say, as Mr. Campbell asserts, "the Naomi was so exactly identical with the Franconia, that it was impossible to distinguish them;" but he said that it was so *nearly* identical as to make it difficult to distinguish them; but, he said, he had both varieties in his grounds, and there were slight points of difference, and especially that the Naomi was hardier. In proof that this is the correct version of Mr. Elliott's remarks, I refer to a communication from his own pen, published in "The Ohio Farmer," of 20th March last, in which, after explaining how the plants of the different seedlings produced by Mrs. Wood had been allowed to become mixed, and inferior ones disseminated for Naomi, he says, —

"I think it was in 1867 that I first made my description, and published it in 'The Ohio Farmer;' and at that time I proposed to take the plant, the fruit of which I had described, and propagate it on shares; but the proposition was not accepted. . . . Years have passed, and not until recently has there been much notice or knowledge of the variety. Now I see it advertised by several parties; and I have no hesitation in saying that whoever purchases *true* Naomi will have no cause to regret the outlay. As I have said, Mrs. Wood grew seedlings, according to her own statement, from fruit of Red Antwerp and Franconia; and my observation of Naomi induces me to think it sprang from the Franconia. The cane is somewhat like the Franconia, not quite as strong or stout, and for many years has proved here, on the Lake shore, perfectly hardy, even to the tops. The fruit is about the same size as Franconia, a little more conical, grains not quite as large, equally or perhaps more firm, not quite as acid, but richer and of better flavor."

I need not inform the readers of the Journal that Mr. Elliott is the secretary of the American Pomological Society, and one of the most careful observers and correct delineators of fruits. He is everywhere regarded as standard authority in questions of pomology; and, furthermore, in describing and introducing to the public the Naomi Raspberry, he had no personal interest to promote; while on the other hand he had his *reputation* to preserve: our committee therefore felt quite safe in relying upon his testimony in regard to the origin and identity of the Naomi; and that it was sufficiently distinct from other varieties to deserve a separate name. Of its quality and productiveness they could judge for themselves; and the ability of the plants to withstand the winters perfectly, for the past ten years, around Cleveland, was proven by abundant testimony.

As mentioned in my former communication, samples of the Naomi fruit were sent last summer to leading horticulturists in a number of different States,

and in every instance it received the highest commendation, without one word of question as to its being distinct from Franconia, or any other variety; and the Cincinnati Horticultural Society, in their published report on this fruit, pronounced it the finest red raspberry for market ever exhibited there.

Painesville, O., May 4, 1869. *M. B. Bateham.*

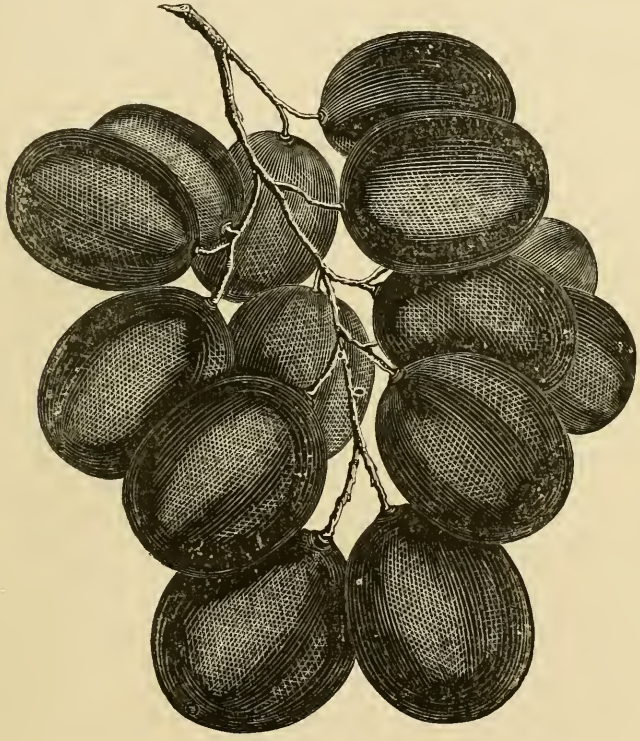
Magnolias.— Our readers will hardly need to have Mr. Barry's article on the Magnolia pointed out to them as one of the most interesting that we have ever published. Nothing can be more desirable than the hardy species of this magnificent tree, coming so early in the spring, delightfully fragrant, and easily cultivated if planted in a peaty soil. They have hitherto been scarce and high priced, owing to the difficulty of propagation; but experience has given Messrs. Ellwanger & Barry so much skill, that they are now able to multiply them with much greater rapidity than formerly.

Mr. Wilder has at his grounds, in Dorchester, a collection of six or eight varieties, planted around the house, one of which, *Soulangeana*, is probably the largest in New England. It is of pyramidal form, branched to the ground, and is estimated to have produced this year some thousands of flowers. We saw it when past its highest beauty; but there were then probably over a thousand left. It is a singular fact that one branch bears flowers of much darker color than the rest of the tree, being very nearly of rose color; and the foliage is also smaller, and puts out later. We would suggest that this sport might be perpetuated by grafting, and thus a new variety be produced. We also noticed in the collection one very peculiar for the large size and elegance of its flowers, which were of about the same size and color as *M. conspicua*, with pointed petals, and a peculiar lily-like form. It was imported many years ago, and the label lost.

These trees were made by layering; but the plan of grafting on the *M. acuminata* is much preferable, giving vigor and robustness to the smaller-growing kinds. We saw, for instance, at Dr. Kirtland's garden at Cleveland, O., growing near the door, a *Magnolia glauca*, which is commonly a moderate-sized shrub, but which, grafted on the *M. acuminata*, had made a trunk as large as a man's thigh. Another specimen of equal size is a *conspicua* in the grounds of Mr. Charles Downing, at Newburg, N.Y. We saw some of Mr. Downing's trees when two years from the bud, and they were then the most perfect pictures of youthful vigor we ever beheld. It would be worth while to raise such trees for the mere pleasure of seeing them grow, even though they never bore a flower.

The Royal Ascot is a black grape of the darkest color, with a slight clean bloom. The bunches have not hitherto been grown to a great size; possibly because the vine has been overtaxed,—an incident common to a new variety of grape: but it compensates for comparative smallness of bunch by immense productiveness; and, if judged away from the exhibition-table, the bunches will be considered large enough for any ordinary purpose where a dessert-fruit of the finest quality is required, irrespective of any appeal by monstrous size to the organ of wonder in the heads of the guests. The berries are large, slightly

oval, and in a minute degree hammered; the flesh is almost melting, sweet, vinous, and gratefully rich. This grape keeps well, and may be had in perfection at all seasons, as the vine readily submits to forcing; but, as it requires little heat, it may be grown to perfection in the cool vinery. Young canes properly treated may be fruited well in twelve months from the eyes: so the purchaser need not wait long to put to the best of all tests its merits as a table-fruit. The remarkable adaptiveness of this variety has led Mr. Standish into the absurd extravagance of describing it as a "perpetual grape." It is not a perpetual



Standish's Royal Ascot Grape.

grape; there is no perpetual grape; nobody wants a perpetual grape: we might as well sigh for a perpetual thunder-storm, or perpetual dinner of herbs, as for a perpetual grape. It must be grown and pruned like any other grape; and it will be found so addicted to production, that new bunches will show while the main crop is ripening. Do away with the word "perpetual," and we heartily indorse all that has been said in favor of Royal Ascot: and, if we wanted a term to indicate its character in the concrete, we should call it a *useful* grape; and, if that is too tame, we have no objection to recommend it as *everybody's* grape.

Propagation of Antirrhinums. — Two methods of propagation are open to the grower, — the one by seed, the other by cuttings ; the former by which to raise new kinds, the latter by which to increase named flowers. Probably it may be accepted as a general rule, that seedlings follow the habit and color of their parent ; but still they cannot be relied upon if it be wished to increase a good variety. On the other hand, it is said that seedlings from the old carmine and white variety will mainly come white. Seed can be sown in July or August, in pans, or on a sheltered plot in the open ground. It germinates quickly ; and, as soon as large enough, the plants should be pricked off into boxes, and hardened by exposure till the frost sets in ; and, during the time it prevails, the plants should be housed in a frame. If planted out in a bed by the early part of April, there will be a complete mass of bloom by July. A sowing can also be made in a cold frame in April ; and by September the plants will flower, but not so vigorously as those treated as biennials.

To propagate by cuttings, they should be taken in August, and placed round the edges of well-drained pots, and deposited in a close cool frame. With very little attention, they will root ; when they should be gradually inured to the weather by the admission of air as they are found to bear it. The plants should remain in the store-pots till spring, and frost will not be found to injure them if kept dry. In order to get vigorous plants, it is best to pot the plants singly in March ; and by May they will be strong, bushy specimens, and can then be planted out. An addition can be made to the stock of plants by taking off the tops when potted ; and, if struck in heat, they will soon grow into nice plants, and will give good heads of flower in September. The process of propagation is so simple, that, with the most limited means, it can be successfully managed.

Of late years, a capital dwarf-growing strain of the antirrhinum has come to be grown. The plants form neat dwarf tufts about nine inches in height : the flowers are also very good, and varied in color. The dwarf kinds are best propagated by cuttings, as a certain proportion of them will be pretty sure to grow tall if raised from seed. Some of the dwarf kinds have pretty, light-colored flowers, which they produce in masses, and therefore could no doubt be turned to profitable account for bedding-purposes. — *Gardener's Chronicle.*

Olea fragrans Culture. — It should be treated as a cool greenhouse-plant, and succeeds under the same treatment as camellias ; that is, as regards heat, &c. Care should be taken to secure a well-formed plant by frequently pinching back and regulating the shoots. After a specimen is formed, and the flowering is past, any pruning required should then be done, and the plant be potted if needed ; keeping it rather close for a few days, until the roots are working freely in the fresh soil. Secure a good growth by preserving a moist atmosphere ; and, by stopping the irregular shoots, maintain the shape of the plant. After a good growth has been made, expose the plant fully to light, and admit abundance of air ; keeping the soil moderately dry during the winter, but not so dry as to affect the foliage. It is propagated by layers ; also by cuttings of the half-ripened wood in a hot-bed. A compost of turfy loam two-thirds, and one-third sandy peat, will grow it well.

KEEPING FRUIT: PROF. NYCE'S SYSTEM. — Experiments in the preservation of fruit by chemical means were made by Dr. Henry in 1776, and are described in Dr. Priestly's "Essays on Air." In these experiments, the fruit, instead of being kept in an atmosphere containing free oxygen, was suspended in carbonic-acid gas. A bunch of grapes thus treated remained fresh and plump for six weeks; while a corresponding bunch placed near it in a similar vessel containing common air, was quite mouldy in half that time. Another experiment was made with some strawberries, which were ripe and rather stale, having been gathered the day previous. The next day, those exposed to the air had lost their flavor; while those kept in carbonic acid had become more dry, but were fragrant and well flavored. On the fourth day, those in the air became quite musty and mouldy; whilst those in carbonic acid were, some of them, firm, and retained some flavor at the end of eight days. In this experiment there were two unfavorable points; namely, that the fruit was stale at the commencement of the trial, and that the carbonic acid used was not pure, but mixed with common air. Various experiments of a similar character have since been made; but, although these trials may be considered as having demonstrated the principle, no attempt to preserve fruit on a large scale, by this means, has met with practical success, until the erection, in this country, of fruit-houses upon the plan patented by Prof. Nyce of Ohio.

The largest of these houses in this vicinity, indeed the only one, with a single small exception, is that of the Massachusetts Fruit-Preserving Company at Cambridge. This is about a hundred and ten by forty feet, sufficiently large to store from fifteen thousand to twenty thousand bushels of fruit. Without noticing the various prophecies of success or failure made before the house was tested, we give some of the results as stated by the gentlemen who had stored their fruit in it.

Mr. Hervey Davis of Cambridge exhibited, Feb. 3, at the meeting of the Cambridge Horticultural Society, twenty varieties of autumn and winter pears, which were taken from the house Jan. 30, of which only five or six kinds were ripe enough to eat. The others were hard and sound, and would require from three to five weeks to ripen. He had eaten Surpasse Virgalieu and Dana's Hovey as perfect in quality as when fresh from the trees. Urbaniste, also, he thought as fine as ever eaten, although some considered them not quite so good. From what little experience he had had, he thought it important that all fruit should be in perfect order when put into the house. It should also be gathered directly from the tree, though he had put some Sheldons in the house that had been exhibited in Boston, Cambridge, and Concord; and they kept well. Beurré Superfin rotted soon after it was taken from the tree. He had Bartletts gathered Sept. 20; kept them in the fruit-house till Oct. 1; then exhibited them in Cambridge three days; carried them to Concord, and exhibited them three days; brought them home; and they were as fine as any he had ever tasted.

Mr. J. V. Wellington of Cambridge, who had stored a large quantity of fruit in the house, exhibited at the same time beautiful specimens of Lawrence, Duchess, Beurré Diel, Winter Nelis, and Beurré Clairgeau, which had all been taken from the house the *first* week in January. He began to take out his Bartletts in Oc-

tober, and had shipped a great quantity, and never heard any complaint of their quality ; a few, he thought, did not retain their flavor as well as others ; Louise Bonne of Jersey were taken out the last of October ; Duchess, Winter Nelis, and others he had in quantities. The Flemish Beauty was hard to mellow. The Duchess he found more difficult to ripen than those kept in the ordinary method. Winter Nelis and Beurré Diel held their flavor best, as far as he had observed ; being as good as if they had not been in the house. Lawrence appeared to lose some flavor ; but Beurré d'Anjou retained its flavor, and ripened well. The Bartlett was one of the good pears of the season : it ripens slowly in the house, and retains its flavor for a while, and after that loses it. Bartlett Pears were not wanted after the later ones came in. He had two hundred bushels of the early kinds in the house, which he kept about six weeks, and then sold them. Inferior fruit should never be put in. After taking the fruit from the house, it should be kept rather cool, then put in a warmer place, but not too warm ; and all fruit should be kept in the dark, if possible. He thought they should not be hurried in ripening. He had kept them in the cellar, covered up, five weeks, before they were ripe. Fruit wanted February first should be taken out of the house January first : it required twice as long to ripen them, and, after they were ripe, they would keep as long again as those that had never been in the house.

Mr. Hovey stated, that the Beurré Superfin was one of the pears which kept best, and retained its flavor when put into the house. Usually, as Mr. Davis said, it soon rotted at the core ; but specimens gathered Oct. 1, put into the house, and taken out Nov. 25, kept in perfect order, and were delicious Jan. 1. He did not think the Bartlett lost much flavor, but that its want of flavor was not noticed until it was eaten with such pears as Urbaniste, Marie Louise, and others, which were so much superior, that the Bartlett did not appear to be as good as usual.

Mr. Merrill said, he had taken a great deal of interest in the preservation of fruit. Though he had but few pears himself, he had seen many from other persons ; and, among others, his friend the late Mr. Briggs had sent five barrels to the house. He saw them opened : they were Beurré Diel, Glout Morceau, &c., all in perfect order, with no specked ones ; and he sent one bushel to Philadelphia : all retained their excellence. He had eaten Beurré Superfin, and found it delicious and firm all through ; Seckel very fine ; Beurré d'Anjou, from Mr. Wilder, had been taken out in perfect order, kept well, and ripened up well. Bartlett, he thought, did not retain its flavor. Catawba grapes which he had eaten from the house were in fine order, and Dana's Hovey could never be better. He thought the acid pears kept the best. If too ripe when put in the house, fruit could not be expected to keep. It should be put in perfectly clean boxes or barrels : much of the fruit he saw was sent to the house in dirty boxes and barrels, which gave it a bad flavor. The company should issue directions when to pick, and how to put into the house. He put some in boxes, and bored one and a half inch holes in them, according to Prof. Nyce's advice ; but they did not keep as well as in the tight barrels.

We have condensed this account from Mr. Hovey's report ; and we think our readers will be struck with one remarkable difference between the fruit kept in

this house, and that preserved beyond its season in a common ice-house; viz., that the former was longer in ripening, and kept longer when ripe, than that which had never been in the house; while fruit preserved in an ordinary ice-house is well known to perish as soon as removed. Perhaps, however, this difference would not be so great in fruit taken from the house in warm weather; for it will be noted that nearly all that mentioned above was removed from the house in winter.

The above statements were made at a meeting of the Cambridge Horticultural Society, in February, 1868, and of course refer to the crop of 1867. The accounts in regard to the last year's crop are not so favorable; but this is said to be largely owing to the want of care on the part of those in charge of the house in maintaining a uniform temperature and degree of moisture. Constant care and vigilance in regard to these points is absolutely necessary, — quite as much, or more so, as in managing a greenhouse.

The principles upon which the flavor and fragrance of fruit depend are extremely volatile, and, with all the attention that could be given, fruit-growers had previously failed to do any thing more than to keep the winter pears a month beyond the usual time of ripening in an ordinary cellar; but summer and autumn pears, such as Bartlett, Seckel, or Louise Bonne of Jersey, have never before been kept in perfect order until January or February. But those who expect to keep fruit perfectly, without the utmost care in gathering and handling, and the most scrupulous attention to neatness and cleanliness, as well as to the general management of the house, will certainly be disappointed.

We may add that specimens of fruit taken from the house at Cambridge, April 10, 1867, were carried to England by Mr. Wilder, and presented to Mr. Rivers, by whom they were tested at a dinner-party, on the 23d of the same month, exciting much gratification and surprise at their perfect preservation; some of Mr. Rivers's guests being at first rather incredulous of his statement, that, besides having been kept over from the previous season, they had made a voyage across the Atlantic.

We hope soon to give an article from Mr. Hovey on this subject, and the general principles of fruit-keeping; and would be glad to hear from our correspondents and others in different parts of the country, in regard to these houses, as well as their success in keeping fruit by other methods.

Tokay Frontignan Grape. — It is doubtful whether this is not an old variety of grape newly named. Mr. Rivers describes it in his last fruit-catalogue as having berries round, medium-sized, juicy, with a rich Muscat flavor; a great bearer, and early; cool vinery or wall; and, from what we know of it, we think it identical with the White Frontignan, of which there are two sorts, the one very closely resembling Chasselas Musqué, and, like it, subject to crack; whilst the other is not so liable to crack, but is much given to shank, and comes in two or three weeks earlier Both are very desirable grapes. — *Eng. Jour. of Hort.*

Mr. Editor, — In the Journal for May, page 310, you speak of "horse-radish." This plant has wonderful vitality, and will grow in all situations, and almost without care. Still, it thrives better with cultivation. I think I succeed very well with it, as I have had *year-old roots*, large enough, when grated, to fill a *quart jar*. Let me give you my mode of cultivation.

My soil is a deep sandy loam, of good fertility, easily pulverized, and easily penetrated by roots, though a little less moist than I should select for this plant. As early in the spring as the soil will pulverize, I manure highly and dig deeply, and plant in rows three feet apart, placing the sets one foot apart. For sets I prefer a piece of round, smooth root three-eighths of an inch in diameter and five inches long; and I plant them so that their tops will be an inch and a half below the surface. It is not necessary that the sets should have any portion of the crown left on them. Cultivate with the hoe until the leaves cover the ground.

I never use for the table any roots except those which have grown the previous year. Old roots are fibrous and worthless. I dig up each spring all I planted the spring before, and shift the location of my bed.

I have tried the crowns planted deeply, as recommended in your Journal, but my "hopes to have a good crop" were not crowned with fruition.

I can assure any lover of this relish, that, if he will try my plan, his hope will not fail. Truly yours, *H. C. Beardslee.*

Painesville, O., May 15, 1869.

Elms. — I am not going to discuss what is and what is not a true species of elm, or of any other plant or animal. Every one who has read Mr. Darwin's last book must see, I should think, that it is impossible for any one to draw up an absolute character for a species. But assuming, for convenience' sake, and for the present purpose alone, that a species of elm is a form or variety of the tree between which and the most nearly allied variety there is a marked distinction, without any intermediate forms known at the present time, are there not three species of English elm? — the witch elm, which does not throw up suckers; the narrow-leaved elm, which grows with a straight stem, and which never has corky bark, usually called, in the north of England, the nave elm, from its being used for the naves of wheels; and the very variable tree which has generally more or less corky bark, and which never grows with a straight stem, to which the broad-leaved elm of the south of England, the Huntingdon elm, Scampston elm, &c., belong, and the varieties of which all run into one another by perfectly insensible degrees. The only question is, whether, in any part of England, all the intermediate forms are to be found between this and what I call the narrow-leaved elm. I have never seen them myself, and, as far as I know, there is this further distinction between them, that the timber of all the varieties of the cork-barked elm is of worse quality than that of either of the other two kinds; whereas the wood of the narrow-leaved elm is much the most valuable of the three, being remarkable for its toughness laterally, and for being very difficult to split. This is caused by the grain of the wood being always satined or waved; as far as I know, this is always the case with the wood of the upright-growing

elm, and never so with the wood of any other. — *C. W. Strickland, Hildenley, in Gardener's Chronicle.*

Massachusetts Horticultural Society. — May 29. C. S. Holbrook exhibited fine specimens of Cooledge's Favorite, Crawford's Early, and Stetson's Seedling Peaches; J. B. Moore, four bunches fine asparagus; Josiah Crosby, fine specimens of radishes and cucumbers.

J. Cruickshank, rhododendrons, azaleas, habesia, and other flowers; also purple beech, purple elm, and variegated sycamore.

June 5. — C. S. Holbrook again showed very fine George IV., Cooledge's Favorite, Crawford's Early, and Stetson's Seedling Peaches.

From E. S. Rand, jr., twenty-two named varieties rhododendrons, and one seedling. Besides these, Mr. Rand exhibited eight of Messrs. Waterer & Godfrey's prize varieties; viz., Mrs. John Clutton, H. W. Sargent, H. H. Hunnewell, Mrs. R. S. Holford, Lady Clermont, Charles Dickens, Stella, and Caractacus. These, Mr. Rand thinks, will all prove hardy, except Mrs. Holford; and it is to be regretted that this one is tender, as the color is distinct and fine. Mrs. John Clutton is a white variety, and was considered the best flower of the thirty shown. Mr. Rand also showed cypripedias, azaleas, andromedas, oxalis, ledums, and scillas.

The botany class of Dean Academy, Franklin, Mass., have made several interesting exhibitions of wild flowers this spring, and another to-day. Wild flowers were also exhibited by E. H. Hitchings. Miss H. M. Barry of Wakefield exhibited fifty species of native plants.

Amasa Farrier of Stoneham sent some fine pansies; J. A. Kenrick, Newton, azaleas, laburnum, pæonies, scarlet horse-chestnut, magnolia purpurea; Mrs. F. Nichols of Dorchester, roses; Miss C. S. Wood, basket of flowers; James M'Tear and J. E. M. Gilley, flowers in variety; J. B. Moore, four bunches of asparagus.

June 12. — The prominent feature of the exhibition was the splendid display of rhododendrons and azaleas. Messrs. Hovey & Co. showed a large number of fine flowers, but without names; E. S. Rand, jr., twenty-six named rhododendrons and seventeen azaleas, all of them the choicest varieties, and comprising new and striking colors.

Mrs. J. E. M. Gilley sent two cocoanuts, which had sprouted and grown more than two feet; Amasa Farrier, pansies; Mrs. S. Joyce, J. M'Tear, J. A. Kenrick, and Sumner Downe, fine displays of flowers in variety. George Hill showed three baskets of Jenny Lind Strawberries, and J. W. Foster a box of the same. The following prizes and gratuities were awarded: —

Prizes. — For the best two quarts early strawberries, to George Hill, $5. The Hunnewell prize, for the best display of named varieties of hardy rhododendrons, to E. S. Rand, jr., $8. Mrs. S. Joyce, for basket of flowers, first prize, $2. Miss C. M. Wood, basket of flowers, second prize, $1.

Gratuities. — To J. W. Foster, for strawberries, $1. To Hovey & Co., for rhododendrons, $5. To the same, for azaleas, $1. J. M'Tear, for bouquets, $3. Mrs. J. E. M. Gilley, $1, for *Cocoa nucifera*. Mrs. S. Joyce, for *Crinum longiflorum*, $1. Sumner Downe, for display, $1.

American Apples in England. — We find in the English "Journal of Horticulture," a notice of an interesting collection of apples exhibited by Mr. Rivers, before the Fruit Committee of the London Horticultural Society, on the 10th of February. Among them are some of our American varieties ; and, as our readers may like to know how these kinds succeed in England, we extract the descriptions : —

Melon. — Fruit large, regular ; eye small ; skin clear pale yellow, flushed and streaked with scarlet, with a fine bloom, very beautiful ; flesh firm, tender, slightly acid, and inclining to mealiness. Rather past its season.

Fallawater. — Large, codlin-shaped ; skin clear yellow all over the fruit ; flesh firm, tender, with a little sweetish flavor, and somewhat mealy. Fruit in fine condition. A good culinary variety.

Yellow Belle-Fleur. — Above the medium size, roundish, smooth, and regular, with a long slender stalk, slightly inserted ; skin clear yellow, with a very slight tinge of crimson here and there ; flesh firm, yet soft, rather dry, and of very insipid flavor.

Ladies' Sweet. — Large, regular ; skin pale yellow, slightly red on the exposed side, with streaks of russet ; flesh whitish, firm, rather dry, sweet, but not rich.

Baldwin. — Medium sized, regular, pippin-shaped ; skin pale straw, deep red on the exposed side ; flesh sweet, soft, and dry. Past its season.

Newtown Pippin. — Large, regular, pippin-shaped ; skin of a uniform greenish-yellow, with white speckles beneath, and a little russet near the stalk ; flesh firm, yet tender, somewhat dry and mealy, sweet, but not rich. In fine condition.

Boston Russet. — Large, irregular in form ; skin rough, greenish, dull red on the exposed side, with streaks of russet all over ; flesh firm, but dry, and flavor passed. Fruit in fine condition.

Belle de Jersey Pear. — Evidently this is the same fruit as the Belle Angevine, Duchesse de Berry, and Royal d'Angleterre of the French horticulturists, and the Uvedale's St. Germain of the English gardens. It is said to have been raised in England, and dedicated to Dr. Uvedale, who resided at Eltham in 1690. It has, therefore, no claim to novelty, although often produced as novel by the itinerant Continental dealers in trees and plants, who occasionally visit English towns for the purpose of turning John Bull to account. It is a fruit of remarkable size, and can be made very beautiful in appearance by rubbing the skin over with a sponge dipped in sweet oil during the period of the fruit's development, and exposing the outer side to the sun, which imparts to it a pretty rosy tint. By thinning the fruit, and only allowing those to remain on the trees which are on strong spurs proceeding from the main branches, they frequently grow to two pounds' and three pounds' weight each ; and one dozen of these pears exhibited in Covent Garden during the autumn of 1867 weighed upwards of fifty pounds. The flavor is not good, and can only be made acceptable to the palate by stewing, and the addition of spice, sugar, and port wine.

The remarkable prices some of these large specimen-fruits realize is, no

doubt, the inducement to produce them, — a result which is easily effected by any practical horticulturist of ordinary intelligence. The itinerant dealers to whom I have alluded apply different names to the fruit, such as "La Merveilleuse," "La Belle Excellente," &c.: but they are very careful not to allow the specimens they exhibit to be cut or tasted; their object being to sell the trees, which, in spite of fine names and powerful recommendations, is an imposition upon unsophisticated purchasers. They affect to apologize for the objection by stating that they are intended as specimens, and are not for sale: whereas the "genuine English" of the matter is, that they dare not allow it, for fear of exposing the imposition they are attempting to practise. — *C. B. S., in Florist and Pomologist.*

De la Madeleine Fig. — This very early fig, which is also called Angélique, is one of the earliest varieties in cultivation. It is quite distinct in character and general appearance, and may easily be known from all others by its beautiful clear yellow fruits, and by the peculiar wavy, crumpled appearance of the leaves, which are sharply serrated, slightly lobed, and somewhat bristly. It is, however, strangely enough, frequently confounded with the White Marseilles, the fruits of which are of a pale green, with opaline flesh; while the De la Madeleine is of a clear pale yellow, with whitish flesh tinged with rose.

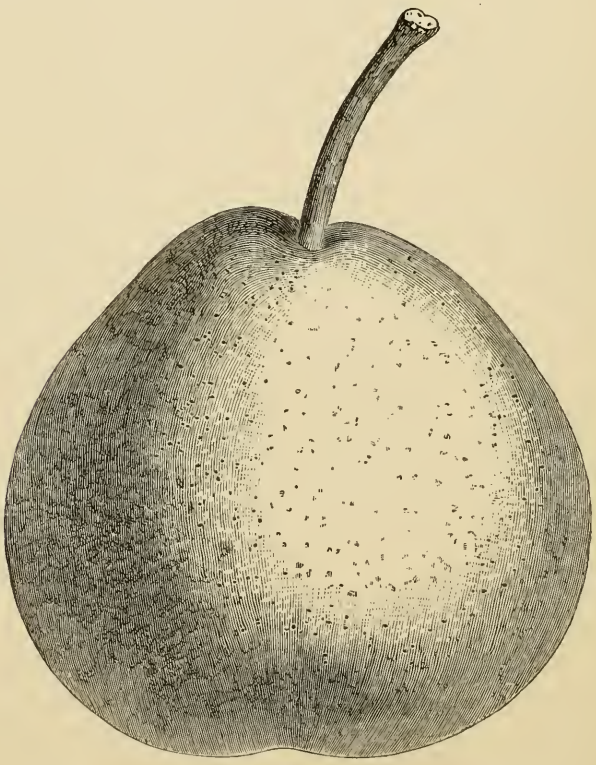
The fruit is of medium size, roundish turbinate, with a short neck. The color is pale straw-yellow; the skin rugose, thin, and cracking in several places lengthwise as it ripens; the flesh is white or pale yellow, tinged with rose, soft, juicy, rich, and pleasant; the seeds large, slightly tinged with rosy pink; the eye small and open, showing the pink tips of the seeds in the interior; and the stalk short.

When well ripened, the fruit is of excellent quality, and slightly perfumed. It is a first-bearing variety, and exceedingly well suited for pot-cultivation, in which condition it will ripen off two or three crops in the season. Its great merits, however, lie in its earliness, hardiness, and suitability for open-air cultivation. It is nearly a month earlier than the Brown Turkey; a fact which should not be lost sight of in selections of figs for out-door culture, as it is mainly owing to the short duration of our summer season, not the actual lack of heat, that figs so seldom answer in the open air in this country.

Lydie Thiérard Pear. — The old Crassane Pear has so long since passed out of cultivation, that, probably, but few of our readers recollect it, with its abundant, sprightly, vinous juice; but those who do will need no further recommendation of this new variety, which is said to be a very remarkable acquisition, and will, it is hoped, be capable of filling the place of the old Crassane, with the advantage of keeping well for a longer time on the tree. Our description is from the "Revue Horticole."

"The fruit is of bergamot-shape, measuring about two and a quarter inches in height, and a little more in diameter; stem of medium size, curved, a little fleshy at the base, in a very large and very uneven depression; calyx open, small; divisions short and rigid, in a large, deep, and regular cavity; skin very

thin, clear green, thickly sown with little brown dots, and with light russet spots near the calyx ; flesh fine, very melting, abundantly supplied with a sugary juice, highly and agreeably perfumed ; core large, rounded, closing on the seeds, which are tolerably numerous, large, short, nearly round, of a clear mahogany color.



Lydie Thiérard Pear.

"The original tree, growing in a chalky soil, and trained as an espalier, is very vigorous and very beautiful, the fruit growing in clusters. The tree sprang from seed of the Bergamotte Crassane d'Automne, sown in 1857 by M. Jules Thiérard, gardener at Rethel (Ardennes). It first fruited in 1866 ; but the first mature specimens were produced in 1867, one of which kept until Feb. 14, 1868; but its season of maturity cannot yet be precisely fixed, and it is not probable that it will generally be preserved so late."

The Hollyhock, and its Culture. — For the summer and autumn decoration of the flower-garden, hollyhocks are of great value, and prove very effective. No garden of any pretensions ought to be without a collection of select varieties. The hollyhock has been in our gardens for nearly three hundred years; having been introduced from China in 1573. Many years, I may say centuries, it was treated as a biennial; and no pains were taken to perpetuate the improvements or variations that were produced, excepting by saving of seed and sowing it, cross-breeding being then unknown. The result was very little variation, and but small improvement on the flower of the original *Althæa rosea*, — a biennial, in color of a bright rose.

Although the hollyhock is perennial when propagated by cuttings and other modes, also when raised from seed in some soils, yet those possessing a fine selection, acting on that principle in the same sense as with most other perennials, will, in the course of a few years, lose their best varieties, and find their collection fast disappearing. The system of planting a border, and allowing it to remain so for years, does not apply to hollyhocks.

Some object to the hollyhock in flower-gardens on account of its height; and there is good reason for doing so, if in a garden of dwarf plants it is placed in front of these, instead of the tall plants at back, and the dwarf in front. But unquestionably it is a noble plant at the back of borders, whether wide or narrow, by itself or in beds, and the grandest of all for shrubbery borders; whilst it cannot be too extensively cultivated as a flower. A garden without a collection of select hollyhocks is destitute of one great attraction.

Varieties. — The following are some of the most useful: —

Alexander Shearer, crimson.
Advancer, shaded rose.
Black Prince, black.
Countess Russell, rosy peach.
Comet, purplish crimson.
Competitor, deep purple.
Decision, salmon flesh, shaded with rose.
Electra, yellow, chocolate base.
Fearless Improved, creamy buff.
Gem of Yellows Improved, deep yellow.
Hebe, creamy flesh, peach centre.
Hon. Mrs. Ashley, bright peach.
Memnon, bright crimson.
Mrs. Roake, blush.
Mrs. Chater, carmine, tinted rose.
Mr. Roake, pale yellow.
Lady Braybrooke, lemon, tinted fawn.
Lady Middleton, rosy salmon.
Lilac Model, shaded lilac.
Pericles, chrome yellow.
Queen of Whites, white.
Reine Blanche, white.
Rev. H. Dombrain, rosy salmon.
Syrian Prince, purple.
Walden Masterpiece, gold and scarlet.
Warrior, bright crimson.

Propagation. — Hollyhocks are propagated by seed in order to raise new varieties, or where plants are required for extensive planting in borders; also by cuttings, division, and eyes.

Propagation from seed is only time, labor, and ground lost, unless the seed has been carefully saved, and from the finer sorts only. The seed may be sown as early as March, and from that time to July or August. I prefer to sow in June, and not later than July. Spring-sown plants become so strong by autumn, that much room is taken up in wintering them, and except for being planted out in autumn, or remaining transplanted in the bed to bloom, are not desirable. I may, however, treat of sowing the seed in spring, in summer, and as soon as ripe.

Sowing in spring may take place at the end of March, or early in April. An open situation out of doors should be chosen, and the ground well dug and pulverized, working in a liberal dressing of leaf-mould. The soil most suitable is a sandy loam : if heavy, it may be improved by a free admixture of sharp sand. The surface having been made fine, place seeds about an inch apart, and cover them with fine soil. All weeds must be removed ; and in June the plants will be fit to turn out in beds. Plant in beds four feet wide, five rows in a bed, and the plants six inches from each other in the rows. If the weather be dry, give the seed-bed a good soaking before taking up the seedlings, which must be done with a fork. The bed for planting ought to be well and deeply dug, adding leaf-mould or rotten manure liberally. Water well at planting ; and, if dry and hot, shade with mats over hoops for a few days until the plants recover. Occasional waterings will need to be given in dry weather, and the bed must be kept clear of weeds. In October the plants will be strong, and fit to plant out in their blooming quarters ; or they may be left where they are ; only every alternate row and plant must be removed, and either planted in the borders or in another bed, which will, of course, be equal in extent to that of the bed in which the plants are left undisturbed. Between the rows, a mulching of half-rotten leaves or manure should be given early in November : and, in spring, fork that neatly into the soil, if the plants are left to bloom in the beds ; or the plants may be taken up carefully, and planted out.

Seed sown during June requires the same treatment ; i.e., to be sown in the open ground : and, when the seedlings have two rough leaves, take them up, and plant out six inches apart every way in beds, shading and watering until established. The planting-out will cause the production of fine fibrous roots for taking up early in October ; and the plants should then be placed in pots large enough to hold the roots without cramping. The pots ought to be set on coal-ashes in a cold frame, giving abundance of air, and protection from frost and heavy rains by drawing on the lights at such times, with an occasional covering of mats in severe frost. The plants should be shifted into larger pots as may be necessary, — that is, before they become pot-bound ; and, being well hardened off, may be planted out in April.

The seed may also be sown as soon as ripe in pans of good light soil, and be placed on a mild hot-bed of from 70° to 75°. When the seedlings appear, keep them near the glass, and give air plentifully. When they have two rough leaves, pot them off singly in three-inch pots, in a compost of light turfy loam two-thirds and one-third leaf-mould, keeping them close in the frame, with proper moisture and shade till established ; and then harden them off, and remove them to a cold frame, where they are to remain during the winter, being shifted into larger pots as may be necessary, and planting out at the end of April.

The seedlings will bloom in the year following the sowing of the seed, and should have proper care with respect to staking, tying, and watering. The object being to preserve good varieties, and to discard the bad, remove every single or semi-double flower, and pull up the plant unless a new color or something worth perpetuating be seen ; also every plant with thin-petaled flowers. By discarding worthless seedlings as soon as they bloom, you prevent the flowers of the

good kinds being impregnated; for these, as a rule, come last. Any thought worth propagating should be labelled; and, if seed be saved, remove the pods as they become brown; cut the stalks off to within two or three inches of the ground, and stir the soil about them with a fork, but not so deeply as to injure the fibres. This will encourage growth for propagation, which may be effected by eyes or by division; and the plants obtained in either way will, the following year, show whether the flower is worth adding to the general collection, or does not maintain its character.

Cuttings may be taken off at almost all seasons. Those put in during the spring afford a late bloom; and those plants propagated from cuttings in summer and autumn flower early and late in summer. The young shoots, when from two to three inches long, are to be taken off close to the old root; and, after paring the base of each cutting smooth with a sharp knife, pot them singly in three-inch pots, using a compost of two-thirds sandy fibrous loam and one-third leaf-mould, with a liberal admixture of sharp sand. Pot firmly, give a gentle watering, place them in a cold frame, shut it up closely, and shade them from the sun. In the course of a week or ten days, according to the time of year, — a week in summer, ten days in spring and autumn, — a little air may be given, but not much until the cuttings are rooted. Avoid excessive watering; but keep the soil moist: and, when the cuttings have rooted well, admit air freely, and expose them fully when the weather is mild or not excessively wet. The plants should be potted as they require more room, and should be wintered in a cold frame as described for seedlings.

Cuttings put in from September to April should have the benefit of a bottom-heat of about 70°, and should be kept close and shaded. Care should be taken not to over-water; and, to prevent damp, a little air may be given. The cuttings rooted, they must be well hardened off, and removed to a cold frame.

Propagation by division is performed in autumn after flowering, — generally in September, or early in October. The root should be dug up, and divided into as many pieces as there are shoots; and these pieces ought to be potted singly in four-and-a-half-inch pots. Any shoots without roots may be potted in three-inch pots, and treated as cuttings; they and the divisions being wintered in a cold frame.

Eyes are the side-shoots taken from the plants close to the roots as soon as they begin to become firm (which will be the case in July, August, or September, according to the forwardness of the plant), cut into pieces with an eye to each. The knife should be sharp; at least the cut must be clean, so as to give an inch or an inch and a half of shoot to each eye. The leaf should be removed with exception of the leaf-stalk, and the pieces or eyes should be inserted in sandy soil as for cuttings; placing them vertically, and covering them with an inch of fine sandy soil. It will answer as well if the eyes are placed horizontally. Cover them with a hand-glass after giving them a gentle watering, and shade from bright sun. When struck, as will be known by their growing strongly, pot them singly in three-inch pots, and place them in a cold frame.

Soil and Situation. — The most suitable soil for hollyhocks is a rich sandy rather than a heavy loam. In the former the plants are more hardy, but do not

grow so strongly. The ground intended to be planted in spring should be trenched in autumn, and thrown up as roughly as possible, in order to expose it to the action of frost; and a good dressing of manure should be forked in. In February or March, the ground should be forked over; and, if no manure was afforded at the time of trenching, it ought to be given now. If the soil is heavy, leaf-mould will help to lighten it; and so will sharp sand. The situation should be open, free from the drip and shade of trees; and if sheltered from wind, all the better. The more sunny and open the situation, the better will hollyhocks grow and bloom.

Planting and After-Treatment. — From the middle to the end of April is the best time to plant for the general bloom; whilst, for a late bloom, planting may take place a month later. The distance apart may be three feet in beds; and, in borders, a like distance may be allowed from plant to plant every way: but in the latter case I generally have the lines four feet apart, and put in the plants at three feet from each other. In planting, make a good-sized hole, and fill it up, or nearly so, with a compost of two-thirds loam from turfs, and one-third rotten manure or leaf-mould. Put in the plants from pots in the centre, lightly scratching the sides of the ball so as to disentangle the roots a little; but, if the size of the pots has been sufficient, this will scarcely be necessary. Make the soil firm about the plant, and give a good watering; and, if the nights are frosty, cover the plant with an inverted flower-pot, taking it off in the morning, and replacing it at night until all danger from frost is over. In dry weather, water must be liberally supplied, especially in May and June, when the leaves are very actively catering for the coming display. When the plants are advancing towards flowering, and are in flower, thorough waterings, in dry weather, are also necessary.

Too many flower-spikes should not be retained. Two or at most three flower-spikes are all that should be allowed on strong plants; whilst one will be sufficient for weak plants. All the others, or side-shoots, should be cut away as they appear. The staking of the plants must be attended to early. Stout, but at the same time neat, stakes must be driven into the ground, close to each plant, and ought to be about three and a half feet out of the ground; and to these the flower-spikes must be tied as they advance. When the spikes have reached a height of seven or eight feet, cut off their tops, if you want them for exhibition, and thin the flower-buds, so that, when expanded, there will be no more flowers than enough to cover the spike; and, if blooms or spikes are wanted for exhibition, they must be protected from rain and sun ten days before the show. If not wanted for exhibition, the flower-spikes may be allowed to grow as tall as they will, and the blossoms need not be thinned; but I like to thin the flowers a little, even in gardens, and to have there as good blooms as are seen in stands at exhibitions, cutting off the tops of the spikes at some height.

After flowering, cut down the spikes to within three or four inches of the ground; and, at the end of October, take up the roots, pot them, and winter them in a cold frame. In sandy, well-drained soil, however, they may be left in the ground; and, this being lightly forked over, put a dressing of leaf-mould round the plants, not very rotten, or short littery manure, and point it neatly into

the ground in spring. In winter, the pots of plants, whether from seed, cuttings, divisions, or eyes, should be plunged to the rim in coal-ashes; the plants being kept near the glass, and afforded plenty of air in favorable weather, with little or no watering at the roots: indeed, the soil should not be more than moist. If fine flowers and large spikes of bloom are desired, the plants ought to be well cared for in potting, never allowing them to become pot-bound; and the greatest possible encouragement should be given to them in May and June by watering, and supplying them with liquid manure once a week, also during any dry periods that may occur afterwards until the flowering is past. — *G. Abbey, in Cottage Gardener.*

Saving and sowing Fuchsia-Seed. — The berries should be left on the plant until they are quite black, and readily part from it; then with the fingers squeeze them in a basin of water until the seeds are separated from the pulp. They will then sink to the bottom. Next drain off the water and pulp, and set the basin on its side in a dry place, so as to dry the seeds. When dry, wrap them up in paper, and keep them until spring. They may be sown at the beginning of March; or, if now ripe, we would sow forthwith. Sow in pots or pans, well drained, and filled to within a quarter of an inch of the rim with a compost of two-thirds sandy, fibrous loam, one-third leaf-mould, and about one-sixth of silver sand. The compost should be sifted. Place the soil remaining in the sieve over the crocks to the depth of an inch, and on it the sifted soil. Level the surface by pressing it with the bottom of a small flower-pot. Scatter the seeds rather thinly and evenly, and cover them lightly to a depth about equal to the thickness of the seed. Give a gentle watering, and place the pots in a house where there is a temperature of from 55° to 60° at night, and from 70° to 80° by day, keeping the soil moist, and near the glass. When the plants appear, afford plenty of light and air, and by degrees harden them off. The pot or pan may be placed in a hot-bed, and the seedlings forwarded there until they are of sufficient size to be put singly in small pots. This should be done as soon as they can well be handled; and after potting they must be returned to the hot-bed, and kept there until they become again established; then harden them off, and remove to an airy position in the greenhouse. A shelf near the glass is the most suitable place.

Nephrodium (Lastrea) fragrans. — We all know the pleasure of grasping loosely the lower part, and passing the hand gently up a branch of the lemon-scented verbena, and how long the delicious perfume remains on the hand which has thus lightly squeezed the leaves. But it is not commonly known that there is a highly odoriferous fern, which, when similarly handled, imparts a very distinct scent of violets, — so exactly like violets, that it is difficult to believe that some of those flowers are not somewhere close by.

This fern is *Nephrodium* (*Lastrea*) *fragrans* or *Aspidium fragrans* of Gray. It is a native of Canada, and perfectly hardy, and well merits cultivation. The soil should be sandy loam.

AGAPANTHUS UMBELLATUS. — This old species of lily contributes a very imposing effect to a conservatory in August and September. The lovely umbels of bright blue, standing boldly erect among other plants, contrast well, and at the same time make them strikingly conspicuous : indeed, their presence never fails to draw greetings and flattering remarks, especially from the ladies ; though the construction of the heads debars them from entering largely into the hand-bouquet, unless in single flowers plucked from the crown.

Propagation. — This is accomplished by seed, division of the roots, and offsets. From seeds, by sowing in a pot any time between March and June, so that the seedlings may acquire sufficient strength to resist the changes in winter. Plunge the pot to the rim in gentle bottom-heat ; and keep the soil constantly moist, both before and after the plants appear above ground. Pot off as soon as the seedlings can be conveniently handled ; and attend afterwards to watering, shading, &c., as is usually done with such seedlings. Division of the roots and offsets are a ready means of extending the stock. For a compost, a light loamy mixture, with sand incorporated to the extent of one-third of the bulk, will do.

General Culture. — Little need be added to the attention generally demanded by free-growing plants. They all delight in high living. A rich, heavy loam, with a third of well-reduced cow-manure and sharp river sand thrown together without riddling, will make them grow strongly and well. Admit air abundantly ; administer water copiously in the growing season, adding a stimulant in the shape of a little guano to the water when the flowers are in the process of formation ; and, wherever situated, air plentifully supplied ought never to be neglected when the flowers are expanding, else the flowers will be deficient of their bright blue, so much appreciated, as well as in good substance. When the flowers have dropped, cut down the stems half way, and prevent seeding, unless particularly wanted, when one crown will be enough to leave ; and it ought to be remembered, that a stance in a vinery for a month in autumn is of material consequence to the maturing of the plants, as well as securing an advanced state of condition for the following year. They may then be allowed to go quietly to rest by withholding water to a considerable extent, permitting the soil to get almost dry in their pots. The plants will then be quite indifferent whether they are placed above, below, or behind the stage of the greenhouse throughout the winter : only, if below, they must be turned on their sides towards the sun, that they may enjoy any blinks that penetrate through the openings. — *The Gardener.*

THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

O. L. M. — The gladiolus-root is botanically a "corm" or "cormus," from the Greek *kormos*, "a stem," and may be defined as a swollen, succulent, bulb-like mass, composing the stem of certain monocotyledons. It is only a variety of the rhizoma, or underground stem.

It is, as you say, sometimes called a "solid bulb," also a "bulbo tuber;" but is not properly a bulb.

Thomas W. Organ, M.D. — Have you any fixed rule or principle for pruning melons to grow early fruit or large fruit? Will the same plan give both results? — Melon-plants are rarely pruned in this country. In warm latitudes, where melons are extensively grown for export or for home market, the fruit forms abundantly, and ripens fully, though the plants are left to their natural growth. In England, where melons are generally raised under glass, the system of pruning is quite similar to that usually practised with the grape, and we think a like course of treatment might be followed to advantage with the melon in open culture, wherever the seasons are short and cold. The vine having made a growth of three or four feet, and the fruit being well set, nip off the ends of the leading stems, and afterwards keep the laterals well in check. To do this thoroughly will require an amount of time and patient attention few persons would be willing to bestow. In cold climates, however favorable the condition of the soil, the vines should be confined to two or three branches, and the fruit thinned to a single specimen for each branch. But, whatever may be soil or climate, a judicious shortening-in of the plant and thinning out of the fruit will promote size, and hasten maturity.

Idem. — When do you prune out limbs of cherry-trees? — Cherry-trees should either be pruned in winter or early in spring, so that the pores of the wood may become closed before the sap flows, in order to prevent bleeding and gumming; or, else, after the leaves have expanded. If pruned early, it will have a tendency to promote the growth of the tree; if pruned late, to check it. A good time to cut out dead wood from old trees is after the fruit has been gathered.

Idem. — The tree-pæony (of which the botanical name is *Pæonia moutan*), moutan being the Chinese name. It is a native of the North of China. In its wild state, the flower is purple, but in gardens we find it white, pink, pale purple, red, and rose. With us, it seldom attains a height of more than three feet; but in China is said to grow ten feet high. Seedlings are easily raised.

Idem. — The seeds of perennial phlox often, but not always, come true.

S. K. Stanton, Detroit, Mich. — Can you give the reason, and suggest a remedy, for the tendency to rot in some varieties of the cherries, notably in the Elton? My trees of this kind are well grown, thrifty, and profuse bearers; but the rot attacks the fruit even while green, and it has been a difficult matter, for the last three years, to find enough perfectly sound and ripe fruit to make it worth while to mount a step-ladder to pick them. — The rotting of cherries when ripe is generally caused by rain or damp weather, and the white, firm-fleshed varieties, such as the Bigarreau, Elton, Napoleon, Florence, and others, are particularly liable to it. The rotting of the fruit when half grown, however, appears to proceed from a different cause, of which we confess ourselves entirely ignorant. We should be glad to hear from any one who can account for it, and suggest a preventive.

O. L. M. — Pæonies may be propagated by root-cuttings, by seed, or by division. The rarer kinds of tree-pæonies are often budded on the more common.

Inquirer. — Save aster-seed from the best flowers, but only take the seed from the circumference of the flower: the centre-flowerets seldom give good seed. Let it ripen on the plant.

Idem. — You will find in our pages, during the past year, several articles on the difference between perlargonium and geranium.

Almost all the plants known in greenhouses as *geraniums* are *pelargoniums*. Our wild geranium is not a pelargonium.

The difference is botanical. While we believe in calling things by their proper names, we fear pelargonium will never be commonly used.

Idem. — Stove-plants are such as require more heat than is ordinarily afforded by a greenhouse.

Many stove-plants, however, will grow at a much lower temperature; and there is no fixed line of demarcation between the two houses or classes of plants. In general, however, the lowest temperature of a greenhouse should not be below forty degrees; while, for a stove, the thermometer should never be below fifty to sixty degrees.

A chill often injures stove-plants as much as a frost.

G. W. I., Cumberland, Marion County, Ind. — The plant sent is *Tradescantia Virginica*, or spiderwort.

Idem. — *Names of Ferns and Plants.* The ferns are not in spore, and it is impossible to identify the species. No. 11 is *Trillium erectum;* No. 10, *Adiantum pedatum;* No. 9, *Osmunda regalis;* No. 7, *Dicksonia punctilobula;* No. 2 is an *Asplenium;* Nos. 3 and 4 are *Aspidiums.*

Puzzle. — The botanical name of the syringa is *Philadelphus. Syringa* is the botanical name of the lilac. Rather confusing, we admit, but easily understood.

Mr. Tilton, — I have allowed the one hundred plants of the President Wilder Strawberry, received from you for propagation last fall, to bear a small crop this year; and I find, that, in size and quality, the berries are equal to those we saw on Mr. Wilder's vines last season, as you will see from the basket I send you to-day. The plants were set out the *21st of September*, have not received extraordinary cultivation, and have been encouraged to make all the runners possible. A row of fifty Triomphe de Gands, set alongside the Wilders at the same time, and cultivated in the same manner, have borne only a small crop of medium-sized berries. Yours truly, *J. M. M., Jun.*

Walpole, Mass., June 30, 1869.

Anonymous Inquiries. — We give notice once more, that, while we are ready to answer any question accompanied with the name of the writer, we cannot give information in reply to others. This notice will be an answer to several of this character.

H. C. Beardslee, Ohio. —Why is the "patience" of the English, the *Rumex patientia*, so seldom seen in our gardens? It is a hardy perennial, of easy culture, produces abundantly, and, as a pot-herb, is, to my taste, scarcely inferior to spinach. A row twenty feet long supplies my table with "greens." — We were not aware that "patience" could now be found cultivated in any garden in the country. Indeed, we think the plant, as well as the manner in which it is used as a table-esculent, very little known. It appears to have been introduced from Europe prior to the beginning of the last century, and, though occasionally found in the gardens of the early settlers, we believe it rarely received much attention, and was generally left to fight its way as best it might. Few plants are more hardy, or tenacious of life; and we not unfrequently meet with it lingering in the vicinity of old gardens where it had formerly been grown, springing up annually as a weed, and putting forth its ample leaves in the most profuse abundance. For the table, however, we do not consider it equal to spinach; still, as the culture is so simple, and the yield so abundant, it may be worthy more attention than it has hitherto received. We are glad to learn that it is having a fair trial, and hope to hear again from our correspondent respecting it.

R. inquires, if dwarf pear-trees can be profitably grown in small, highly-cultivated gardens, why they may not be in larger ones with the same care? He does not see why, if a half-acre can be cultivated at a given expense, a whole acre cannot be at twice that expense, and ten acres at ten times the cost of one. — Our correspondent's logic and arithmetic are both correct: his error lies in the assumption that the same proportionate care will be bestowed upon ten acres as upon one acre, which it will not, for various reasons, the chief of which is, that in this country, at least, the skilled labor necessary can be obtained only at a cost beyond what the return will justify, or else it cannot be obtained at all. In all the most successful instances of growing pears on dwarfs, the greater part of the labor has been done in small gardens by the owners themselves; but the limit of the work which any one man can do with his pair of hands is soon reached. Moreover, the personal interest which the cultivator of a half-acre of pet trees feels in them cannot be bought at any price. The maxim, which, in various forms, has been repeated for two thousand years, that "the foot of the husbandman is the best manure for the soil," is emphatically true in every branch of horticulture, and in none more so than in this. Another reason for the greater success of dwarf pears in small gardens is that they are generally much more sheltered than in large orchards.

S. F. Dac., Philadelphia. — Syringe the roses with whale-oil soap, or dust them with white hellebore-powder. Either will kill slugs or thrips. As to rose-bugs, pick them off, and put them in hot water.

A CORRESPONDENT writes, that he has an apple-orchard of some fifty trees, in full maturity, and asks if the general practice of scraping the bodies is to be recommended. It appears to be his opinion, that the protection afforded by the coarse, loose bark against cold in winter and the influence of excessive heat in summer, more than compensates for the injury resulting from the few insects it is generally supposed to shelter. — He is undoubtedly right in his views of the value of the protection afforded by the rough outside bark. The necessity of such protection is not generally understood; but those who have seen the soft, tender bark on the limbs of a tree scorched by the sun as soon as it was deprived of shade by removing the limbs in grafting, would need no further argument to convince them of it; and we have known an instance, where, in a severe winter, trees with a smooth bark were generally killed, while those with a rough bark escaped. Some cultivators have even gone to the trouble of shading the stems and large limbs of their trees with straw and mats to protect them from the sun. It is just as natural for the bark of an apple or pear tree to become rough when it has attained a sufficient age, as it is for it to bear fruit. The tree sloughs off the old bark, and this forms a most admirable non-conductor of heat and cold. Nothing can be more pernicious than the common custom of scraping apple and other trees "to the quick." The inner bark, which ought to be moist, soft, and white, is soon dried, indurated, and browned by the sun and air. We should as soon think of scraping off the pustules on a man's face to cure him of small-pox, as of scraping a tree to make it vigorous. But there is a condition of the bark, well known to the experienced orchardist, which is an indication of want of vigor. The scales of outside bark are small, clinging closely; and the whole bark has a dry, hard appearance. The remedy must go deeper than scraping. Dig in a generous dressing of manure, and prune out all superfluous wood early in the spring. At the same time, the stem and large branches may be treated to a wash as follows: Take a large tub, say half a molasses hogshead, and put into it a wheelbarrow-load of yellow clay, and an equal quantity of fresh cow-manure, covering it with water. After soaking and mixing a day or two, add half a bushel of wood-ashes, a pound of sulphur, and six or eight pounds of soft soap, and mix well together; then slake half a peck of lime and add to the mixture, using water sufficient to make the whole about the thickness of cream, which will nearly fill the tub; mix well together for several days; then, with a common whitewash-brush (an old floor-brush will answer), paint the bodies of the trees, having first used a smaller brush to paint the crotchets of the limbs, and the limbs themselves as far as possible. If our correspondent will act on these principles, he may trust the woodpeckers to remove all the insects that will harbor under the bark.

A. C. S., Duxbury, Mass. — Not an *Arethusa*, but own cousin to it, *Pogonia ophioglossoides*.

A CORRESPONDENT wishes to know where plants of the mammoth sage, which produces no flowers, but is propagated by division of the root, can be obtained.

H. Robenson, Auburn, N.Y., would like an article on the strawberry, giving the best varieties for table use. He has a moderate garden, and cultivates for his own taste, and wants the best and most prolific. — We recommend, as combining productiveness with good quality, Hovey's Seedling, as the main crop, with about one-tenth the number of Brighton Pine as a fertilizer. Triomphe de Gand, Brooklyn Scarlet, and Jucunda are of fine quality, but more moderate bearers. Lennig's White is still finer flavored, but a poor bearer. La Constante is of the highest excellence; but the foliage is apt to burn. Napoleon III. is new and fine, so far as tested. But, whatever you plant, do not fail to leave a place for the President Wilder. As soon as the strawberry season is over, we shall give an article containing the results of this year's experience. The old beds which are so mixed that you cannot select from them had better be dug into the ground.

K. has seen directions for raising mushrooms by inserting pieces of spawn in a bed, and would like to know what spawn is. — Mushroom-spawn is the root, stem, and branches of the mushroom, or, at least, what corresponds to these parts of other plants; while the pileus, or eatable part, commonly called the mushroom, answers to the flower and fruit, bearing the spores, or seeds, upon the gills which radiate from the centre on the under side. If the droppings of a horse, especially one highly fed, are examined after they have lain a short time, there will be found among them tufts of white threads, resembling mould, but tougher and more substantial, running through the dung. This is the mycelium, or spawn, of the mushroom, and is produced from spores taken into the stomach of the horse with his food, and developed by the moisture and warmth of his body. If pieces of this spawn are placed in a bed so prepared as to afford a proper degree of heat and moisture, the thread-like substance will soon be found spread throughout the bed, and from it will grow a crop of mushrooms, which may be of different species, corresponding to the spores from which it grew. The spawn is usually mixed with clay, and made up into cakes, like bricks, for sale. It will retain its vitality two or three years.

STRAWBERRIES IN NEW JERSEY.

By William Parry, Cinnaminson, N.J.

The strawberry season having passed, it may not be out of place to make some note of the kinds that have done best in different localities.

We have had a good crop here of most of the leading varieties; and, the weather being favorable, they were gathered and shipped in good order.

We have heretofore endeavored to get our berries to market as soon as possible, and the earliest varieties were preferred as most profitable; but now find we must change our course, and select the best varieties ripening at a later date, as we cannot compete with the South in early fruits, with which the markets are well supplied before we commence to send: so that our early strawberries the forepart of June scarcely average ten cents per quart, which, after paying for picking, freight, and commissions, leaves but little for the growers; while fine late strawberries were sold in Philadelphia market on the 19th of June, in large quantities, at thirty to fifty cents per quart; some at seventy-five cents, and a few extras at a dollar a quart.

Wilson's Albany is still largely grown on account of its great productiveness.

Agriculturist produced a large crop of enormous fruit, commanding the highest price in market.

Of the newer varieties, the Charles Downing, Romeyn, and Boyden's No. 30, have all given great satisfaction, being large, showy berries, and very attractive in appearance.

Kentucky, raised by J. S. Downer, from the seed of Downer's Prolific, much resembling the Charles Downing, strong, vigorous grower, with stout fruit-stalks, holding the berries well up from the ground; blossoms perfect; fruit large, firm, bright red color, and excellent quality; time of ripening full a week or ten days later than the above-named varieties, thereby keeping up the supply of strawberries until raspberries appear.

Nicanor, excellent to eat of, and very productive, but too small for market, therefore of little value here, as we aim to cultivate the kind of fruit that brings the most money in market, thinking that is good enough for home use.

Dr. Nicaise, not productive enough to be retained in cultivation.

Napoleon III., large and productive, but not a bright red color to please the eyes of purchasers: so it will not be much grown here.

6TH MO., 30, 1869.

A SPOILED CHILD.

PERHAPS no fruit in the domain of horticulture has ever had a fairer trial, at least in this part of the country, than the strawberry La Constante. Its whims and humors have been consulted so far as possible, and every thing has been done to make it justify its name.

But it is proverbially fickle. Up to the very time of the fruit's ripening, the cultivator can hardly tell whether he is to have any fruit or not.

Sometimes the leaves burn, and sometimes, at the last moment, the fruit refuses to mature.

A little bed of my own, containing two hundred good plants, in rich, strong soil, gave every promise this season of making a fair return for the protection, weeding, hoeing, and guano it had received. Yet, after all, the only product of the bed was a few deformed, stumpy berries; the whole two hundred plants not furnishing a single handsome fruit. *J. M. M., Jun.*

A DAY AMONG THE RHODODENDRONS.

On Friday, June 4, by invitation of H. H. Hunnewell, Esq., we visited his estate at Wellesley, for the purpose of examining his magnificent collections of rhododendrons and azaleas, which were then in the first flush of beauty. Under the guidance of Mr. Harris the gardener, we had the opportunity not only to view the masses of flowers, of whose beauty no words can give an adequate idea to one who has not seen them, but to ascertain the management by which they are produced, and the plants kept in perfect health. The first requisite, without which it is vain to expect satisfaction, is thorough preparation of the ground before planting. The soil here is naturally of gravel, with a thin surface-layer of mould; and this gravel was removed to the depth of two feet and a half, and replaced with a mixture of peat and sharp sand. Such a soil combined with good drainage and shelter explains the whole secret of growing rhododendrons. It has heretofore been universally believed that they required shade; but Mr. Harris repeatedly stated as the result of his experience that what is needed is not *shade* but *shelter*. In support of this view, he mentioned that he had been obliged to remove pine-trees which shaded the rhododendrons, and he also pointed out several places where they were reaching forth from the shade, showing that they seek the light like other trees. Another idea which has prevailed, but which Mr. Harris finds incorrect, is, that they must be grown in masses so as to protect each other; for when planted in the soil described above, and well sheltered, they become clothed with foliage to the ground, and so protect themselves. Mr. Harris is frequently under the necessity of thinning out the rhododendrons where planted too closely; but such are the masses of roots formed when they are frequently transplanted, that he has no fear of loss by removal. The best season for transplanting is either the middle of May or early in August. They may, however, be removed when in flower; and we saw a bed which had just been planted with those thinned from other beds. Though every plant promised to grow, they would have been removed earlier, but for press of other work. Mr. Harris thinks, that, to secure perfect development, the plants should ultimately be not less than fifteen feet apart. Imagine a rhododendron fifteen

feet in diameter, and clothed with flowers and foliage to the ground! One such plant would be worth more than a hundred of the bare, lean, straggling stems too often shown.

The collection comprises about fifty varieties, of every color, from white, through pink, rose, lilac, scarlet, crimson, and purple, to nearly blue. In regard to hardiness, it is difficult to say what varieties are best, as sometimes those which come through one winter unharmed will be injured the next, and *vice versâ;* but Mr. Harris favored us with the following list, which he regards as combining all the most desirable properties, including uniform hardiness, with variety of color; viz., *purpureum grandiflorum*, *Archimèdes* (scarlet), *Everestianum* (rose), *album grandiflorum*, *roseum magnum*, *Pardoloton*, and *chancellor*.

The collection of azaleas, though less extensive than that of rhododendrons, was perfectly gorgeous; indeed almost too dazzling. There were between thirty and forty varieties, white, buff, pink, yellow, orange, flame, of every shade and combination, the best of which are *sulphurea*, *atrorubens nova* (dark red), *rosea lineata* (striped rose), *magnifica albicans* (white), *aurantiaca splendida*, *delicata nova*, *rosea formosissimus*, and *nobilis*, the last yellow and a strong grower.

Although the rhododendrons and azaleas were the special attraction to us, the other objects of interest were not unnoticed. The preparation of the soil and the planting having been done in the most thorough manner, the trees show a vigor and depth of verdure seldom seen; the white pines being of almost as dark a green as the Austrian. Among all the rare and beautiful trees collected here, we think there is not one to surpass our native hemlock. What can be more lovely than the masses or single specimens of this tree, with its feathery foliage; at this season the pale green of the young shoots contrasting with the dark shade of the old branches, and the budding cones showing their delicate purple tints? As to the lawn, we may say in one word, that it is perfect.

Among other new trees which Mr. Harris pointed out was a new larch, the seed of which was received from Japan. The habit of growth resembles the European larch, while the foliage has the bluish-green color of the American species, but is much longer and more dense than either.

We noticed also the *Pinus ponderosa* and *Pinus Benthamiana*, described

by Mr. Barry in the May number of this Journal. The two species are undoubtedly distinct, the latter branching more irregularly than the former. We may here remark, that, in our illustration of *Pinus ponderosa*, the leaves should be spread more ; the specimens sent us by Mr. Barry not having regained their natural form after packing. Both species had suffered somewhat from the winter, though well sheltered. *Abies monstrosa* is a new species with foliage strongly resembling the *Araucaria*, though the curves of the limbs and general habit of the tree are less pleasing. *Pinus cembra*, with its peculiar sea-green foliage, was entirely uninjured by the winter. Several fine specimens of *Magnolia Soulangeana* had been literally covered with their fragrant blossoms: fine specimens also of *Magnolia tripetala*, *cordata*, and *macrophylla*, were in bloom.

The arborvitæ hedge on each side of the walk leading to the fruit-garden and greenhouses was so fresh and thriving, that we inquired how it had escaped the injury which so many have suffered the past winter ; to which Mr. Harris replied, that he attributed its exemption, as well as that of other trees, to the fact that they never suffered from drought. One circumstance showing forcibly the importance of shelter is, that while, in a few very exposed situations, even the white pines and hemlock were browned, much tenderer species stand year after year without injury when sufficiently sheltered.

The Italian garden, of course, did not escape our attention. The parapet at the top crowned with its vases of *Agaves*, as the balustrade at the bottom on the border of the lake is with *Araucarias*, alternating with *Yucca gloriosa ;* the numerous specimens of Scotch, Austrian, and white pines, arborvitæs, silver and balsam firs, Norway and hemlock spruces, and *Juniperus chinensis*, the hardiest and best of all for this climate, clipped into curious forms ; a row of Irish yews in tubs, with vases of curious plants scattered throughout, — render this one of the most prominent and unique features of the place. The variety of deciduous trees clipped is not large, although there is scarcely any but bears the shears admirably. Among these, Mr. Harris mentioned particularly the native beech, which he thinks one of the most attractive trees we possess, and is surprised that it is not more cultivated for ornamental hedges ; its bright, light-green foliage making it an object of conspicuous beauty. A hedge of hemlock around a

purple beech affords a beautiful contrast of color; and the view from the platform at the summit, looking over the terraces and lake to the wooded hill on the farther bank, is of surpassing beauty.

Strongly contrasting with the Italian garden, in which art is carried to its height, and the more so from its close proximity, was the rockery and grotto of stumps, where the wildness of Nature is most successfully imitated. This had just been planted with a great variety of beautiful flowering and foliaged plants, including ferns, among which were many British species, aquilegias, spireas, caladiums, begonias, sedums, callas, marantas, &c., with a variety of alpine plants, which in a short time will produce a most beautiful effect, combining the charms of the tropical and temperate regions.

We had time to give but a glance at the extensive green and hot houses, but in the orchard-house we were interested in seeing the old tree of the Stanwick Nectarine, the first one imported into this country, but bearing a good crop the present season. The crop of peaches, plums, and apricots was heavy, and the trees in a most healthy condition.

We were also shown in the stove the *Alocasia Jenningsii*, a new species with a beautifully mottled stem, and a collection of magnificent tree-ferns, imported from England the present season, including *Dicksonia antarctica* with a stem five feet in height, and nearly two feet in circumference, *Alsophyla australis* with fronds five feet in length, *Cyathea excelsa*, *Smithii*, and *squarrosa*, with stems varying from one foot to five feet in height, and a fine specimen of *Cibotium regale*, which took the prize at the Universal Exhibition in Paris. That very rare and beautiful plant, *Anthurium Scherzerianum*, was also in bloom; as were fine specimens of *Allamanda Schottii*, *Stephanotus floribundus*, and *Lapageria rosea*. Mr. Harris remarked that he had used eight thousand pots of bedding-plants to decorate the grounds this summer. The lofty and spacious conservatory adjoining the mansion was gorgeous with gloxinias, calceolarias, geraniums, fuchsias, and other brilliant flowered plants, all in the fullest bloom. Outside was a large specimen of the *Musa ensete;* and on either side of the entrance to the mansion two remarkably firm *Araucarias*, in tubs, the limbs of which have been aptly compared to branches of green coral.

We find that we have entirely omitted to mention the masses of *Kalmias*, which, at the time of our visit, were beginning to show their flower-buds:

and doubtless we have overlooked many other interesting objects; for it is obviously impossible in two or three hours to do justice to a place so rich in trees and plants from every part of the world, and which is, on the whole, undoubtedly the most complete in New England, if not in the United States.

THE LUNGREN SQUASH.

By Fearing Burr, Hingham, Mass.

Little is known with regard to the origin or history of this new squash. It was introduced to public notice in the spring of 1868, by Messrs. Washburn & Co. of Boston, Mass.; a sample of the seed having been received by this firm from Dr. H. G. Lungren, a resident at Volusia, Fla.

Planted in good soil, the vine grows vigorously, and attains a length of fifteen feet and upwards. The leaves, which are large and on long footstalks, are peculiarly, and often even beautifully, variegated with orange or bright yellow; the color being distributed from the base of the leaf, around which it is usually most profuse, in irregular, serrated bands or stripes towards the borders.

The fruit is bottle-formed, almost pure white, ten or twelve inches in length, eight inches in diameter at the broadest part, and weighs on the average, eight or ten pounds. The neck is quite solid, and four or five inches in thickness. The stem is short and fleshy, and measures nearly the same in diameter as in length. The flesh is pale yellow, or yellowish-white, firm, dry, and sweet, mild and pleasant, with little of the strong, unpleasant flavor common to many varieties. The seeds, in size, form, and color, appear to be intermediate between those of the Hubbard or Autumnal Marrow and the Winter Crookneck.

The variety is evidently allied to the Puritan, and would unquestionably intermix if cultivated in its vicinity; for it may be worthy of notice, that the fruit of the Puritan is occasionally found scarcely distinguishable in size, form, color, or even in quality, from the Lungren, though the plant is never seen with the variegations peculiar to the last named.

The Lungren Squash is fit for use as soon as it attains a suitable size, and the plants yield as abundantly as the Autumnal Marrow or Hubbard.

THE LUNGREN SQUASH.

With ordinary care, the fruit will keep till mid-winter.

DRAINAGE OF FLOWER-POTS.

By Peter Henderson, Bergen City, N.J.

In the May and June numbers of your Journal, your learned correspondent, Mr. A. Veitch of New Haven, Conn., has lengthy and elaborate communications on this subject. I trust I shall not try the patience of your readers by my reply. Mr. Veitch offers no new argument for the practice, but merely repeats, in a wordy way, some of the few stereotyped ones used by all advocates of drainage in pots.

He quotes from my recent work, "Practical Floriculture," an expression I there use, that the practice of draining flower-pots is "wrong in theory, and perfectly useless in practice;" and takes exception to it in rather a peculiar way when he asks the question, "Is it because such drainage is unnecessary that it is wrong to do so?" I most certainly think it is; for any work that is unnecessary to perform is certainly useless, and, if useless, is a waste of labor, and hence wrong.

But this question of drainage is not whether plants require it or not: we all agree on that. But the question at issue is in what way the water passes from the pot; whether from the bottom, or whether from the sides. We who advocate that the practice of crocking pots is useless claim that nine-tenths of the escape of moisture is from the sides: they who practise "bottom drainage" would signify by so doing, that, in their opinion, the escape of water is mainly from the bottom. If any one wishes to decide this question for himself, let him take half a dozen *glazed* pots, such as water will not percolate through, let him knock the whole bottom out if he will, and "drain" in the usual way with potsherds, charcoal, or any thing else he sees fit. Let him also take half a dozen of the ordinary style of flower-pot, fill these up with the same soil as used for the glazed pots, but *without drainage.* Let the same sort of plants be grown in each lot, and under the same conditions of temperature and moisture. Let him note the result three weeks after the experiment has been made, and if he does not find that the *glazed* pots, with the bottom drainage, show indications of stagnant water in a greater degree than those in the porous pots, then all my observations on this subject have gone for nothing.

If I am correct in this, does it not most emphatically prove that the escape of moisture is nearly entirely from the sides of the pot, and not from the bottom, and hence the futility of placing potsherds in the bottom for drainage? The merest tyro of a gardener knows that his plant quickly shows yellow leaves in a *hard-burned* pot, and that the soil becomes sour; but, if he is of the school to which Mr. Veitch belongs, he may not be willing to admit that this result is entirely in consequence of insufficient drainage *of the sides.*

But a "tree is known by its fruits," a practice by its results: there is now no florist of any extent in the vicinity of New York that uses drainage in his flower-pots, be the variety what it may, be the plant large or small. Also there are few of us who think it necessary to have more than *one* mould heap. Yet nowhere in the country is a greater variety or finer plants seen than in the markets of New York. Mr. Veitch may have evidence, perhaps to him unpleasant evidence, of this fact, any spring, without coming to New York to see; for we distribute them plentifully in New Haven and other Connecticut towns, which his more scientific (?) practice is unable to supply.

Mr. Veitch says that his system (that of using drainage) has received the sanction and support of the most intelligent and capable gardeners in modern times. Before I agree with him, I would like to know how far his "modern times" date back, and in what country these intelligent and capable plant-growers reside. If in the United States, and if his modern times mean the present time, then I beg to differ from him about the evidence of intelligence and capability; for the fact is notorious here, that, whenever any grower persists in crocking and such like antediluvian operations, his "intelligence and capability" does not manifest itself in very rapid progress; but, on the contrary, he generally runs a one-horse concern to the end of the chapter.

But, to show Mr. Veitch that I have no intention of "trifling with an important subject," I make the following proposition: He may select, when he pleases, a score of plants from any genus he may choose to name (as the challenged party I give him choice of weapons). Let him take ten of them, and I will take the other ten. Let him grow them according to his doctrine of drainage, I according to mine; say for twelve months from the date of starting, or long enough, according to the variety chosen, to

make "specimen plants." Let them be offered in competition at a regular meeting of the Massachusetts Horticultural Society, the judges to decide upon their respective merits. And at starting let each of us place in the hands of the proprietors of this Journal from one hundred to five hundred dollars (as Mr. Veitch may approve), empowering them to hand over the money of the loser for the benefit of the society. This proposition is perfectly practicable, and gives Mr. Veitch every chance to win ; for I have never claimed that injury results from his mode of practice, while he says it does by mine.

I well knew, Mr. Editor, when I gave out my views on this and analogous subjects in floriculture, that I should tread on the conservative toes of thousands such as Mr. Veitch ; but am content to abide the issue, and complacently point to the results from this teaching, not only in my own establishment, but to that of all others who are the most extensive and have been most successful in the trade.

But it is common with the mass of men in all operations of labor to cling tenaciously to old customs, no matter how palpable may be the evidence of their absurdity. A story is told, that in one of the Dutch settlements of Pennsylvania, where they adopted the primitive custom of carrying the corn to the mill across the back of a horse, one family from time immemorial had been in the habit of placing the corn in one end of the bag and a stone in the other to balance it. One day, the son, in adjusting the bag, found that it might be balanced without the stone, and, overjoyed at the discovery, brought his father to see ; but old Hans solemnly and wrathfully decided against such new-fangled ways : he had always carried the stone to the mill, his father had always carried the stone to the mill, his grandfather had always carried the stone to the mill; and why should he set himself up to know more than they ? From such argument there could be no appeal ; old bare-bones was saddled with the rock as before, and the world moved on.

June 21, 1869.

STRAWBERRIES IN 1869.

By J. M. Merrick, Jun., Walpole, Mass.

The following is a statement of the behavior of several varieties of strawberries with myself, this season.

These results have been obtained from experiments on a small scale; the beds of varieties fruited containing only a few hundred or a few dozen plants, as the case might be.

Ambrosia. — This is a strong-growing kind, but a very moderate bearer. The fruit is a truncated cone, medium size, dark red, sweet, and pretty good.

Alice Maude. — I have not fruited this; but I notice that the leaves of my plants burn considerably.

Agriculturist. — This variety seems to have done wonders in various localities this season. In quality it is the same as ever; i.e., not above second rate.

Admiral Dundas. — All the blossoms proved failures this season. I did not get one berry.

Brooklyn Scarlet. — For home-use this is a decent berry. The plants usually bear one or two immense berries which ripen early, and a multitude of small ones which ripen late. The flavor is excellent; but the berries will hardly keep over night.

Bijou. — This seedling of De Jonghe's has borne a moderate crop of rather handsome, sweet berries. It is a very dwarf grower, and rather early.

Downer's Prolific. — A bed of this variety, in a poor, sandy soil, unmanured, and, in fact, untouched for three years, bore this season a very good crop of medium-sized fruit. The berries are rather acid, but have a good flavor, and the vines are very productive.

Emma. — If I have the true Emma, I must say that I never saw a more wretched strawberry. It is vigorous and moderately productive, but completely devoid of all flavor or taste. To eat a berry is like taking a mouthful of flour-paste.

Exposition de Châlons. — I have kept this berry three or four years for

the sake of its peculiar flavor, so different from that of any other berry I know; but I can find but few who like it. The plant is vigorous, the berry a compressed cone, light red, and firm.

Empress Eugenie. — A compact, bushy grower, bearing a few red, cocks-combed, poor-flavored berries. Of no special value.

Jucunda. — This noble strawberry is now pretty widely known, and I can only say, that, with me, it fully justifies all that Mr. Knox has said and written about it. It is one of the most valuable acquisitions of late years. It is noteworthy, that, in some locations, the berries are all flattened and irregular; while in others, as with myself, they are all regularly conical.

Lady of the Lake. — This appears to be a very productive strawberry, and perhaps will be a popular market-kind on account of its size; but it is not much above third-rate in flavor.

Lennig's White. — This beautiful strawberry is gaining ground. Few have ventured to plant it on a large scale, on account of its unproductiveness; but it can be made to bear a good crop by keeping it in rows, and cutting off the runners. No berry that I know excels this in the true pine-apple flavor. A dish of Lennig's White is a treat fit indeed *pour les vrais amateurs gourmets.*

Monitor. — Speaking from one year's experience, I can see nothing to commend in this variety. If mine are true to name, it is a sour berry, difficult to hull, and only moderately productive.

Dr. Nicaise. — Probably there never was in all horticultural history a greater delusion than this strawberry. It has almost every defect, except small size, that one strawberry can have. In Gloede's latest catalogue it is well described: "Fruit soft, pasty, of middling quality. It has the defect of often ripening on one side, while the other remains green; and, in a rainy season, it is not edible." It is, in my experience of two years, a moderate grower, a very poor bearer; and the irregular, ugly berries ripen and decay on the upper side, while the lower side is still green.

Orb. — A row of a hundred plants of the Orb, well cared for, has not produced this season one single good berry. There were, to be sure, six or eight abortive berries, about as big as small peas; but they were the whole product of the bed.

President Wilder. — I fruited this grand berry this season for the first

time, with plants set Sept. 21, 1868, and I have had ample opportunity of observing its behavior in well-established beds in the originator's grounds, both this year and last summer. I think there can be but one opinion of its merits. A cross between the La Constante and Hovey, it retains the beauty of the former, and adds to this the strength of foliage of the latter, and in size surpasses both. Many practical men who grow strawberries for market on a large scale, and who have seen only the *fruit* of the President Wilder, have expressed themselves entirely satisfied with the berry itself, but have been at the same time very sceptical about the value of the plant, recollecting the treachery of La Constante, and taking it for granted that any descendants of this variety must have poor foliage. But the experience of the last three years has proved beyond a doubt that the foliage of the President Wilder is as strong, as firm, and as healthy as that of any variety grown. The color, size, and flavor of the berry, and the productiveness of the plants (single vines, in hills, one year old, sometimes sending up four distinct trusses of fruit), put this new variety in the very foremost rank.

Triomphe de Gand. — This variety maintains this year its reputation as a kind that, raised in rows or hills, and liberally fed, will never fail to bear a good crop.

The enormous quantity of rain that fell in many places this year injured the looks and flavor of some varieties; but for large strawberries, this has been a very favorable season.

I was visited by the rose-bugs in great numbers this year. They attacked a bed of strawberries of about one acre and a half, and devoured the leaves to a shocking extent. I picked thirty-seven from one leaf. No remedy against their attacks has ever been discovered, so far as I know. Nothing will answer but picking by hand. They eat the leaves of Hovey's in preference to those of Wilson's, which certainly shows good taste.

July 7, 1869.

RHODODENDRON EXPERIENCE.

By Edward S. Rand, Jun., Boston, Mass.

The winter of 1867–68 was probably more severe upon evergreens than any we have experienced for a long series of years.

The mercury in the vicinity of Boston fell to twenty degrees below zero, and ten below was not an unfrequent degree of cold.

Violent and piercing winds were very prevalent; and the early months of spring were characterized by fierce drying breezes, which seemed to draw the moisture from every thing.

When the sun in April began to gain warmth and strength, the disastrous effects of the season were soon apparent.

Cypresses, yews, the more tender and beautiful of the firs and pines, *Retinospora*, *Cephalotaxus*, *Thuiopses*, and many rare evergreens, were either killed outright, or so fearfully cut up as to be valueless.

Hemlock hedges showed great yellow blotches; white pines in many exposed places had a sickly, yellow look; and even the red cedars led one to infer they were so called from the spring color of the foliage: and the general aspect gave us reason to doubt whether there was such a thing as a hardy evergreen.

Evergreens being in this condition, we turned with fear and trembling to our masses of rhododendrons, kalmias, andromedas, and azaleas. Here, also, we had reason to grieve. Large kalmias four feet high, and as much in diameter, which had stood uninjured for years, were either killed to the ground, or had not a green leaf upon them. Azaleas had the flower-buds, and, in many cases, the young wood, killed.

Many large, well-established rhododendrons were badly cut up, both in wood and foliage. The native *R. maximum* lost all its flower-buds; but leaf and growth were uninjured. Andromedas, much to our surprise, escaped uninjured. The smaller rhododendrons, those less than two feet in height, generally came out in good condition where well established, probably owing to being well protected by snow during the extreme cold. Yet this same protection seemed to avail little in the case of seedlings from two to five years old, which were generally entirely killed.

The summer of 1868 was peculiarly favorable to all "American plants:" there was enough rain to enable them to make strong growth, and the autumn was dry enough for all young wood to be fully ripened. The plants generally set bloom well, and at the beginning of November could not have looked better. They even seemed in condition to stand another severe winter; and we could not but say, If we can only have a moderately mild winter, our rhododendron culture is a success. The winter of 1868–69 passed: little snow, no cutting winds, rather an even temperature, the thermometer at Glen Ridge showing for its lowest point three degrees above zero, and nowhere in the vicinity of Boston falling to more than two degrees below.

March was a calmer month than usual, and April was as near perfect as a month of disappointed expectations (a fair description, in fact, of our New-England spring) can be. In fact, we had nothing to complain of in the weather, winter or spring. What is the result? Kalmias more cut up, if possible, than the preceding year; azaleas badly injured; rhododendrons which had stood for years wholly killed, and andromedas almost denuded of foliage.

Thus far, the facts; now, the causes. And here we are met by such a mass of conflicting evidence, that we must confess ourselves wholly at a loss to frame theories.

One may say, the severity of the preceding winter weakened the vitality of the plants. We have no reason to suppose this; for the plants were generally never in better condition to stand the winter than in the autumn of 1868. All wood was fully ripened; there was no weak, sickly growth; and the ground was in as good a condition as could be wished all through the season.

Again: it was the want of the protection of the snow. Not so, as far as our experience goes; for many of our largest rhododendrons were killed to the ground, — plants so large that for years the snow had never covered them: and we know of plants in our vicinity, twelve feet high, which had stood uninjured and unprotected for at least twelve years, being killed to the ground.

And again: the lot of plants that suffered most with us was on a northern hillside, where a snowdrift covered them most of the winter. Perhaps

it was the winter's sun. We have plants of the same variety, in equally good condition, equally exposed to the sun, growing so near that the foliage touches; the one is all cut up, the other uninjured. And we may make the same reply to the theory that the damage was caused by the winter's cold or wind. What peculiar atmospheric action has, then, been in operation to cause such injury? It is not alone manifested upon American plants, but is marked in its effect upon evergreens. Hemlocks have generally escaped uninjured; but white pines have in many cases suffered severely, and we have many pitch pines thirty feet high wholly killed.

Arborvitæ hedges never suffered more, and show as masses of yellow, or large patches of killed foliage.

Our theories are at fault, and therefore, having presented the facts, we close with a recital of our experience with species and varieties.

Rhododendrons ferrugineum azaleoides and *punctatum*, uninjured 1868; foliage killed 1869.

R. Duc de Brabant, killed 1868 and 1869. Unquestionably a tender rhododendron, although it stood 1866 and 1867, the foliage only being somewhat injured.

R. lucidum, killed to the ground 1868, foliage killed 1869. Too tender for general cultivation.

R. ferrugineum, unhurt 1868, foliage killed 1869.

R. Paxtoni, killed 1868, foliage hurt 1869; but plants had previously stood uninjured for five years, and bloomed finely.

R. fastuosum, foliage killed 1868; plants killed to the ground in 1869, which had stood three years previously, in rather a sheltered place, however.

R. purpureum grandiflorum, uninjured 1868; killed, or foliage injured, 1869.

R. Nero, killed 1868; uninjured 1869.

R. giganteum, *gloriosum*, and *Lefevreanum*, all hardy 1868 and 1869.

R. splendidum, foliage somewhat browned.

R. Reedianum, killed to the ground; doubtless tender.

R. maculatum nigrum, foliage much cut up, flower-buds and young wood killed.

R. Hendersoni, foliage and flower-buds killed.

R. maculatum rubrum, foliage and young wood killed.

R. hyacinthiflorum (a variety of *R. ponticum*), young wood and foliage badly killed. These last five are all too tender for New England.

R. Attila, foliage badly browned, but flower-buds safe.

R. Leopardi, killed.

R. Catawbiense flore pleno, flower-buds generally safe, but foliage killed.

R. azureum, foliage somewhat brown.

R. Ne Plus Ultra, killed.

The record of these last five is only for 1869.

R. Blandyanum, a varied experience, extending over five years; of many plants, some have stood wholly uninjured, some are killed, some only have foliage injured, all in the same bed: 1869 was more severe upon them than 1868.

R. Perrianum, hardy 1869.

R. rubens, hardy 1869.

R. grandiflorum, hardy 1868 and 1869.

R. bicolor, hardy 1868 and 1869.

R. Sir Charles Napier, hardy 1869.

R. President Van den Heck, foliage somewhat browned, flower-buds safe, 1869.

R. Marc Antony and *Towardii*, hardy 1869.

R. Aclandianum, foliage all killed 1869.

R. candidissimum, killed 1869.

R. cœlestinum pictum and *R. grandiflorum*, hardy and nice free-flowering varieties.

R. Hannibal, hardy, very fine.

R. cœrulescens, hardy.

R. coriaceum, hardy, very distinct and desirable as a white.

R. Standard of Flanders and *aucubæfolium*, hardy 1869.

R. atrosanguineum, killed 1868; hardy 1869.

R. fragrans, killed; tender.

R. Wilsonianum, foliage badly browned.

R. ovatum, killed to snow-line 1869.

R. Govenianum, young wood killed 1869.

R. Chancellor, foliage killed 1868 and 1869.

R. delicatissimum, foliage killed 1869 on plants which for five years had stood uninjured.

R. hirsutum, and the striped variety, uninjured up to 1869; then foliage killed.

R. dauricum, a charming species, perfectly hardy.

R. Cunningham's dwarf white is the hardiest of the *Ponticum* varieties; fifty plants have stood 1869, and are generally uninjured.

R. roseum pictum, killed every winter; doubtless tender.

We have not mentioned many of the well-known hardy varieties, but only those about which a question may be raised.

Andromedas Catesbaei and *floribunda* stood 1868, but were injured in 1869.

A. Mariana and *pulverulenta* were killed in 1868, but stood uninjured 1869.

A. polifolia, and varieties *minor* and *rubra*, are hardy.

Erica (*Gypsophylla*) *herbacea* and *carnea* are tender if left uncovered; but, if a few leaves are thrown over the plants in November, a fine show of flowers in April will be the reward.

Ledum angustifolium, *latifolium*, and *palustre* uninjured for years to 1869, badly killed this last winter.

Why will not every lover of these splendid plants jot down his yearly experience? Thus, by comparing notes, much advantage might be derived, and great annual loss be saved.

Glen Ridge, July, 1869.

DUC DE MALAKOFF STRAWBERRY.

Readers of the earlier numbers of Putnam probably recollect the solitary cherry raised and watched by Sparrowgrass with so much care, and picked by some vandal the very day he had invited some friends to come and see it; and I think that this year I have found a somewhat similar case. A bed of the above-named strawberry, about five feet square, full of strong plants, well tended and manured, gave me this season *one* tolerably large berry and three or four small ones. We can hardly call this a market variety. *J. M. M., Jun.*

GRAPE-GROWING AND WINE-MAKING IN THE LAKE-SHORE REGION.

By "Catawba."

The village of Brocton, Chautauqua County, N.Y., has, during the past few years, achieved considerable eminence as one of the centres for wine-manufacture in this country. It is situated on the Lake-shore Railroad, about a mile and a half from the shore of Lake Erie, in the midst of a fertile country. The surface of the vicinity is gently undulating, with a gradual rise of from one hundred and fifty to three hundred feet to the mile, until, a few miles back from the lake, the height of land is reached which divides the waters discharging into the St. Lawrence from the head waters of the Ohio River.

The vine-growing belt of this region has a breadth of from two to three and a half miles; and thriving vineyards are to be found from the land on the borders of the lake to altitudes as high as four hundred and fifty feet above its level.

The soil varies. There are extensive ridges of gravel parallel with the lake, which, for many years, was supposed to be the only soil on which the vine would succeed; but experience has shown that a sandy loam, with an underlying clay nearer the lake, and the clay loam on shale rock which is the soil of the hillsides, are equally adapted to successful grape-culture.

By this description, it will be seen that the land has a general exposure nearly to the north-west, in the immediate vicinity of Brocton, though, a few miles to the west and east, the plain between the range of hills and lakes widens; and on it, also, vineyards have been successfully cultivated for many years: but the experience of the last few years has shown that the vineyards farther up on the hillsides ripen their fruit earlier, if any thing, than those in immediate proximity to the lake-shore.

The success which attends vine-culture on the shore of Lake Erie is to be attributed to the influence of that body of water upon the atmosphere. The mean temperature of the summer season is lower by several degrees than in the interior; while in winter it is several degrees higher. The cold

air of the lake in spring retards vegetation so far, that there is seldom any injury done to the vines by late frosts; but, when once the buds have started, the shoots grow with wonderful rapidity. The warm water of the lake tempers the air passing over it in the fall, and keeps back the autumn frosts until the last days of October, or first days of November.

Even the Catawba generally ripens, and the Isabella seldom fails to fully mature its fruit, while the earlier varieties are certain.

The towns of Portland, Pomfret, and Westfield, in the centre of which Brocton is situated, have another advantage by reason of their geographical position. A few miles back from the lake, and over the range of hills, is Chautauqua Lake, a navigable body of water, over twenty miles long. In autumn, when, sometimes, the sun sets with a clear sky, and gradually the air from Lake Erie ceases to waft over the land, and when, in a less favored region, frost would be regarded as certain, there is seldom any apprehension felt on this score. Experience has shown, that, on such occasions, during the night, a warm southerly breeze, wafted over the surface of Chautauqua Lake, returns to disturb the course of Nature which would otherwise be fatal to the maturity of the fruit.

Another fact which favors the section is the moderate rainfall of summer. The charmed section between the hill-tops and the lake-shore will not unfrequently be favored with dry weather and warm sunshine, while beyond the hills and over the lake, the storm-clouds will be sending down copious rains.

In the three towns named, there are nearly fifteen hundred acres of land in vineyard, about nine hundred acres of which are in bearing; and yet the great bulk of the grape-lands, almost the whole, are still devoted to ordinary farming-purposes.

Though grapes have been successfully cultivated for forty-five years, and there are a number of vineyards over thirty years old, yet it has only been within the past ten or a dozen years that grape-culture has assumed proportions of any magnitude.

More recently, a greater impetus has been given to it by the investment of capital from other parts.

Mr. T. L. Harris, the head of a religious community, purchased about seventeen hundred acres of land, and has already over seventy acres of

vineyard, thirty of which are planted with the Salem, one of the best of Rogers's Hybrids. Mr. E. F. Underhill, late of New-York City, and the present clerk of the lower branch of the New-York legislature, has purchased one hundred and fifty acres of land, and has twenty-three acres of vineyard. His is, probably, besides one of the largest, the best laid-out, and the best cared-for vineyard in the section.

Mr. W. F. Bonynge of New York purchased one of the oldest and best vineyards in the county, near Fredonia, and has added largely to it since his purchase. T. S. Hubbard & Co. have one of the finest vineyards in the county, consisting of over twenty acres, in the vicinity of Fredonia.

Of the older vineyards, those of the Hon. J. B. Fay, Mr. Clinton S. Fay, Mrs. Lydia Ryckman, of Brocton; Mr. R. D. Fuller, Thomas Quigley, Samuel Jones, and Lincoln Fay, of Portland; Mr. A. S. Moss, Mr. Edmund Day, Dr. Wheelock, and Mr. T. W. Bristol, of Fredonia; and Mr. R. Thompson, and Drs. Hall and Conch, of Westfield, are the most extensive.

The principal varieties planted (placed in the order of the amount of land devoted to them) are the Isabella, Clinton, Catawba, Concord, Delaware, Diana, and Iona; the Isabella being probably more than half of the whole. All of these varieties thrive, and, with the exception of the Concord, are used in the manufacture of wine.

The cost of freight, boxing, and commissions in shipping grapes to the market, and the increased production over the country, is leading grape-growers there to plant those varieties only which can be used for wine; and for this reason the Concord is being discarded for the Delaware, Clinton, and Iona.

The Diana has a high reputation for the quality of its wine; but, in Chautauqua, it does not yield as well as some other varieties.

The manufacture of wine to supply the demands of commerce was only commenced six years since: another enterprise then inaugurated, last year passed into the hands of Messrs. Ryckman, Day, & Co., the former of whom was one of its projectors. Their establishment consists of a main building of brick, and wing with cellar and sub-cellar under each, having a storage capacity of one hundred and fifty thousand gallons. The casks used hold from five to seven hundred gallons each. The enterprise was

begun with limited means and a small product; and though with an occasional drawback, caused by want of experience in its early career, it has, nevertheless, gone on with increasing success both in the quantity and quality of its product, until now it has established a permanent and increasing trade, fully equal to the ability of the firm to manufacture; and that, too, without the necessity of advertising to give publicity to their wines. Last year, their product was twenty thousand gallons; this year it will be more.

Of sparkling wines, they manufacture three brands. The "Diamond Wedding" and "Honey Moon" are made mainly of the Isabella must, combined with the Diana, Delaware, and Catawba, with a view to flavor. The "Sparkling Catawba" is described by its name.

They have several varieties of still wines. The Isabella, which lacks in saccharine matter, by the addition of a small amount of sugar to bring the must up to eighty-five degrees in Oechsle's must-scale, produces a wine so nearly assimilated to some of the Rhine wines as to deceive experienced wine-tasters.

The Clinton forms the staple of their red wine. The grape is rich in sugar, and makes a deeply colored, rich, heavy-bodied wine. The acidity of the grape gradually passes off as the wine increases in age. To be appreciated, it should not be drunk until two years old; and it is still better at three: it is one of their best wines, and commands a high price.

Catawba wine, one of their articles of manufacture, needs no description. That variety has already a national reputation.

Last year, they manufactured nearly two thousand gallons from the Delaware; and the quality of the product shows it to be one of the best varieties for the manufacture of white wine. The Diana and Iona (a small quantity of the latter having been made last fall) they regard as standing at the head of any varieties yet cultivated in their section for white wine.

Some of their wines, at one year old, they sell at wholesale as low as one dollar per gallon; others command a dollar and a half, and even two dollars, with an increased price as they become older.

THE PETUNIA.

By Joseph Breck, Ex-President of the Massachusetts Horticultural Society.

The petunia is a flower of rather recent introduction. It is not noticed in the edition of "Loudon's Encyclopædia of Plants" published in 1829. I find from another source that the purple petunia (*Petunia purpurea*) was introduced into England from South America (its native place) in 1831. "The name is said to be from *petun*, the Brazilian name for tobacco, a plant to which the petunia is closely related." The white species, *P. nyctaginiflora*, has large white flowers. The foliage of both these species is characterized by possessing a viscid or glutinous substance, unpleasant to the touch, and not very agreeable in its odoriferous qualities. It is, therefore, unfit for a nice bouquet, as the flowers partake in some degree the offensive properties of the leaves and stems, though the improved varieties are somewhat modified in this respect. The fine hybrid flowers, in all their gay colors, are very effective when arranged in a flat dish, with some green foliage, like that of the smilax. From these two distinct species have proceeded the numerous showy and improved varieties now cultivated by florists. Their number and beauty appear to be increasing every year by the wonderful process of hybridization. Thus they break out into beautiful shades and colors, of rose, purple, crimson, and dark maroon, striped, blotched, or edged with white; or pure white or rose richly veined with purple, rose, or carmine; or any of these varieties, with a lively green border; also every color and shade found in the single sorts may be seen in the numerous double and semi-double varieties.

Some of the last-named are very beautiful, and have rather gained on my fancy of late, since I have produced many beautiful varieties from fecundated seed obtained from Prussian florists the present season.

The seed comes in homœopathic doses, very little being obtained from these improved sorts, as there is only here and there a capsule upon a plant, and these containing but a few seeds. It does not come to us by the ounce, or by the sixteenth or thirty-second of an ounce, as do many other choice seeds, but by the thousand seeds. Now, ten thousand petunia-seeds will not make much of a show in a teaspoon: so that it will be per-

ceived that they are more precious than gold-dust, when the reader is informed that a collection of twelve varieties of double petunia-seeds, each

GREEN-BORDERED AND PURPLE-EDGED PETUNIAS.

package containing only twenty seeds, costs about a dollar and fifty cents. But mark the result of my experience with one of these collections, and see

if it is not worth more than an ounce of the common sorts, at less than half the expense, which would produce plants enough for an acre.

The seeds from one of these collections, in all about two hundred and fifty, were sown in my greenhouse about the middle of January, on the surface of the soil in a seed-pan, and lightly covered with fine sand. In sowing seeds so fine as those of the petunia, great care is necessary to keep the surface moist, and shaded from the direct rays of the sun; and more care still must be given when the seeds begin to germinate, as an injudicious watering by pouring upon the young plants will destroy many of them; but, when watering is necessary, it should be applied in a very gentle way through the fine rose of a water-pot. From the seed-pan, the plants were transplanted into a box, and, when of a suitable size, removed into pots. In May, some of the plants began to show flower, and in June were turned out of the pots into beds; and, by the 5th of July, most of them were in flower. From this collection of seeds, about a hundred and twenty-five plants matured. Of these, a portion were disposed of, leaving seventy-five plants, which have given thirty per cent of double or semi-double flowers; many of them being very beautiful, not only of the double and semi-double, but also of the single varieties. Even if the seed is obtained from the highly-improved varieties, there is a tendency in some plants to assimilate to the character of the wild species; but in this lot there were but two or three of this character. Some of the finest of these seedlings I shall propagate from cuttings, and give them a name. The imagination has to be racked to find names for the numberless varieties of beautiful flowers that are constantly brought to light by the skill and industry of florists. Multitudes of these names and varieties are lost every year, being superseded by new sorts, with new names; sometimes of an improved character, and sometimes not. But every amateur florist wishes to bring his flowers into notice, though they are soon to be lost.

In the illustration, the upper flower is rose color, veined with purple and bordered with green; the lower is purple carmine, edged with white. Another of these seedlings, a deep crimson, measures four inches in diameter, a full double flower. Another very delicate double flower is pure white, variegated with rich lilac purple; one semi-double variety is of a rich, dark, velvet-like purple, shaded with crimson; another semi-double,

pure white: and so I might go on to describe fourteen or fifteen distinct and beautiful double and semi-double varieties, besides duplicates of the same, and as many more improved single varieties from this collection of Prussian seeds.

The petunia makes the best display when planted in masses in the grass, or in beds prepared for them in the common garden.

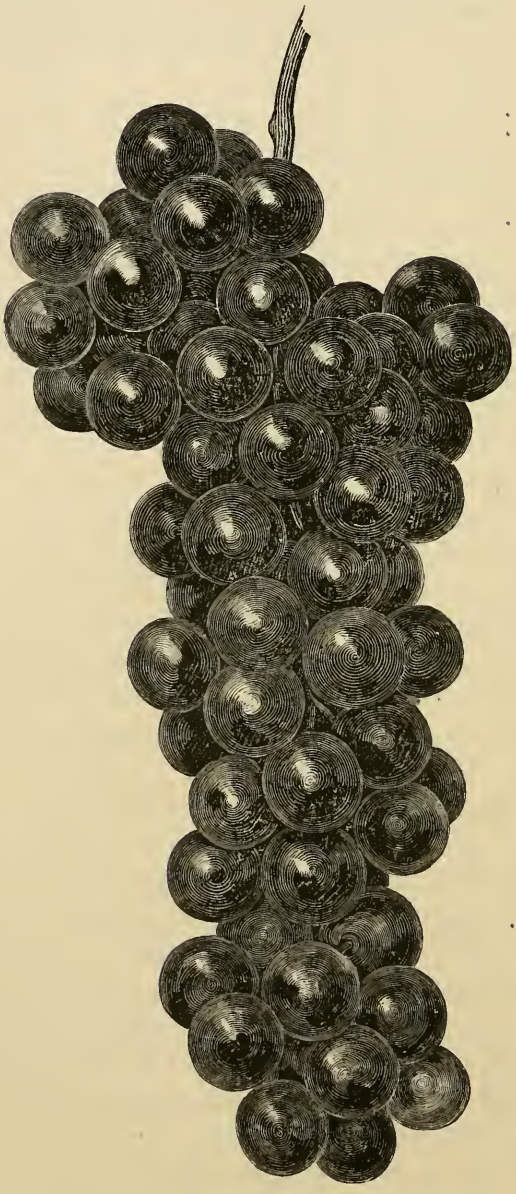
Single plants of the fine varieties, when well trained to a trellis, either in the border, or in pots in the greenhouse, are very showy. The double varieties are not so abundant in flowers as the single sorts, and do not stand out-door culture so well. The common sorts were esteemed very highly when first introduced; but they have made themselves too common, as they fill the ground with their young plants by the profusion of seed, and are now considered but a little better than weeds.

THE BRANT GRAPE.

Our illustration of this variety is from a specimen sent us last autumn by the originator, Mr. Charles Arnold of Paris, C.W., by whom it was at first designated No. 8. We are not aware that it has fruited, except on the grounds of the originator, and we are indebted to him for the description.

This grape is a seedling of Clinton crossed with Black St. Peter's. It is entirely distinct, both in flavor and appearance, from any other grape. The leaves are very deeply lobed; and both half-grown leaves and the young shoots are of a peculiar dark blood-red color. The fruit is eatable before either Massasoit (Rogers's No. 3) or Hartford Prolific; but, after the slight frost that we are subject to here in the latter part of September, the fruit becomes very much improved, and continues to improve by hanging upon the vines till quite late in the season. Color black; skin thin; free from pulp; seeds quite small. The flavor is difficult for me to describe; it seems to be very sweet, but yet to retain the peculiar pleasant tartness of the frost grape. It never falls from the bunch, or loses its flavor from keeping, like many of the Labrusca family, but will keep all winter, and is then

equal in flavor to the best foreign grape. The vine is a good grower, and



THE BRANT GRAPE.

hardy as Clinton, the wood ripening nearly to the tips early in September.

NOTES ON NEW STRAWBERRIES.

By Charles Downing, Newburgh, N.Y.

Wishing to see and examine the new strawberries as grown in various localities, I first called on William S. Carpenter of Rye, N.Y., where I found a good collection. Among the best were Boyden's No. 30, of very large size, roundish, obtuse-conical, regular, sometimes with a short neck; bright crimson in color; flesh quite firm, juicy, sprightly, sub-acid, and very good flavor; plant vigorous and very productive, and, from what I could see of it, I think it will prove a valuable market-sort as well as for home-use.

Barnes's Mammoth is nearly or quite as large as Boyden's No. 30, about the same color, not quite as regular in shape, not quite equal to it in flavor, rather less productive, but a vigorous grower, although the foliage appeared a little browned or sun-burnt.

Charles Downing was grown quite extensively, and was fully equal to what J. S. Downer (the originator) and its friends claimed for it. Fruit large, conical, regular, bright crimson in color; flesh quite firm, rich, sub-acid; plant vigorous, very productive, and, from all I could see and learn of it from others, it will prove a valuable market and family sort; although one grower in New Jersey said the leaves browned a little in the sun.

On Ellwanger & Barry's grounds at Rochester, the Nicanor (one of their seedlings), an early-ripening kind, was in fine condition: the plants were vigorous and very productive; and so I found it in other localities. Fruit medium to large, roundish, obtuse-conical, regular, deep scarlet; flesh rather firm, juicy, rich, sub-acid. It is said to be a good market-variety, quite as productive and profitable as Wilson, and of better flavor.

There were many other new varieties, both native and foreign, on these grounds; but, not being sufficiently ripe for eating, no notes were taken.

President Wilder. — Having heard much of this new variety, I had a desire to see for myself, and spent an hour with the originator in looking over the bed, examining and tasting it, and came to the conclusion that it had not been overpraised. The berries were larger than represented in the engraving, the flavor was excellent; and, on the whole, it is the best new

kind I have seen. Fruit large to very large, very regular; color bright scarlet; flesh firm, juicy, sweet, and rich. The plants had a hardy, healthy, vigorous look, and were very productive. If it succeeds as well in other localities and soils, it will be an acquisition both for the amateur and marketman.

Another new variety, the Clinton, is represented by a New-Jersey grower as likely to equal if not to exceed the Wilson as a market-sort in vigor, hardiness, and productiveness; but, not having seen the fruit, I can say nothing of its quality, &c.

At the fruit-grower's meeting at Rochester, Jacob Moore of that place exhibited his seedling, Moore's Early, which was of large size, conical-compressed; color bright glossy scarlet; flesh quite firm, juicy, rich, sub-acid. Mr. Moore said it ripened with Early Scarlet, and was vigorous, productive, and a valuable early sort.

J. Keech of Waterloo had also several seedlings on exhibition, which were showy, of large size, and good quality; but all unnamed, except one, America, which was large, obtuse-conical, wedge-shaped, and somewhat irregular; color dark crimson; flesh quite firm, with a very good sub-acid flavor. Mr. Keech said it was quite early, and all the berries ripened nearly at the same time.

HYDE'S EMILY.

This new pink, now first being sent out by William C. Strong, bids fair to prove the best white in cultivation.

It is a noble flower, full, free, clear in color, never bursting, and as fragrant as the old pink carnation. In growth, the plant is sturdy, free-flowering, and, in fact, all that can be desired.

Mr. Hyde has been most fortunate in the production of seedlings; and the subject of our present notice must supersede all other white varieties. It has the additional advantage of being perfectly hardy. *E. S. R., Jun.*

Glen Ridge, April, 1869.

RAISING NEW VARIETIES OF FRUIT FROM SEED.

By Robert Manning, Salem, Mass.

In the whole range of horticultural operations, there is nothing more interesting, I think I may say so interesting, as the originating of new varieties of fruit. To those who are familiar with it, there appears nothing strange in the fact that the varieties of fruits, with few exceptions, do not, like our common vegetables, reproduce themselves from seed; but to the beginner nothing is more surprising than to be told, that if he sows the seed of apples, pears, strawberries, &c., each seed will produce a new variety. Some indeed may so closely resemble their parent or parents (for very likely, if not artificially hybridized, they will be accidentally) as to be practically identical; but the great majority, while bearing a family likeness to their progenitors, will yet exhibit such marked differences as to constitute distinct varieties. In such a fruit as the strawberry, it would seem at first thought almost impossible that there could be room for so many varieties; but the resources of Nature are inexhaustible, and somewhere in plant or fruit, in leaf or habit, in size, shape, color, flavor, hardiness, or season of ripening, or in various combinations of these, we find individuality asserted.

Formerly it was believed, that, if we sowed the seeds of the best varieties of fruit, they would return to the wild type; but this error is now dispelled, and it is found, that, of seedlings from the best varieties, a large number will possess many valuable qualities, with some, perhaps, of superior excellence. Such was the case in Mr. Dana's experiment, where seeds of the Seckel, Bartlett, Beurré Diel, and others of the finest pears, produced that superlative variety, the Dana's Hovey (probably from the Seckel), besides the Excelsior, America, and other fine sorts.

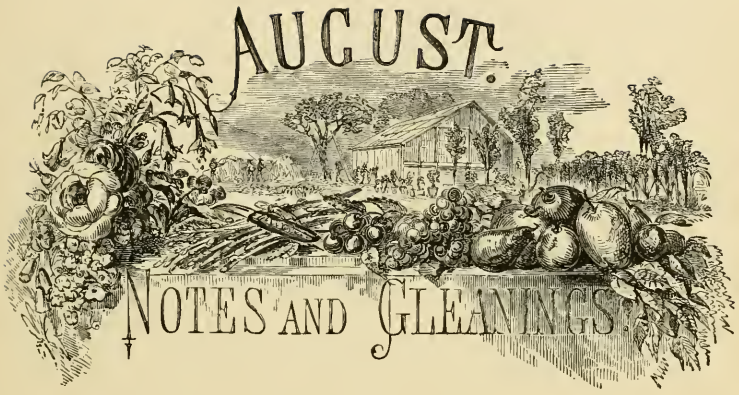
Without reviewing the steps by which our fruits have been gradually ameliorated in the course of centuries, let us consider for a moment the marvellous improvements which have been effected in our own day. Take, for instance, the Hovey's Seedling Strawberry, which we may almost call an infinite advance over any that preceded it. Consider the wonderful improvement which has been effected in the potato, as if by magic, within a few

years, and the numberless varieties of grapes of the highest quality, which have supplanted the two or three sorts cultivated only a few years since. Now, we cannot think we have, with all these improvements, reached the limit of progress, if, indeed, there be a limit. The Clapp's Favorite is in size and beauty undoubtedly superior to any other of its season ; but who will give us a new variety equal to it in size and flavor and beauty, and still earlier?

The President Wilder Strawberry I do not hesitate to pronounce, after three years' acquaintance with it, and a very careful examination of the beds during the last two years, superior to any other strawberry ; but who will give us another President Wilder as good as the first, and as early as the Jenny Lind?

And so we might go on specifying the points in which improvement is desirable ; and we cannot doubt that not only are all these destined to be supplied, but that Nature has in store for us new fruits possessing characteristics of excellence now undreamed of; and the new creations, as we may call them, continually opened to our view, lend a fascination to this pursuit beyond that of any other branch of cultivation.

It is not necessary to have a large extent of ground in order to raise new seedling varieties. Mr. Dana's pears were all gained in a small and crowded garden ; and the fine raspberries and other fruits originated by the late Dr. Brinckle were grown in the still smaller limits of a city lot. I have said nothing of the pecuniary rewards which await the originator of a new fruit superior to any of its kind, for they are well understood ; but the true lover of horticulture will find an ample recompense for all his pains in tracing out the different modifications and sports of his seedlings. One thing should on no account be omitted, viz., a careful record of all the seeds sown ; for it is by comparison of such data that we must, if we cannot attain to a full knowledge of the laws which govern the production of new varieties, at least gain some insight into them.



Critique on the July Number. — Magnolias. — Well chosen, Mr. Barry, and a text from which a sermon may often be preached to advantage. There is no finer tree in foliage and flower than the magnolia, and it is a disgrace to us as horticulturists that we see it so seldom planted. Dr. Kirtland's articles published in the first year of "The Journal of Horticulture" called public attention to the genus. Now, let you and I, yes, all of us, Mr. Barry, who have trees, and mean they shall be appreciated, keep punching the hard-headed public until people open their eyes to the beauties which God gives free as air. Is *Magnolia Lenné* hardy with you? and how about *purpurea?* Do not confine yourself to the spring-flowering species; but, in another article, tell us your experience with the fragrant *M. glauca*, and its varieties; the hybrid *Thompsoniana*, charming as any; *tripetala*, a very showy tree; *cordata*, glorious in flower; *auriculata* or *Fraseri;* and the magnificent *macrophylla*.

Pear-Blossoms. — The brief article on pear-blossoms is suggestive, calling attention as it does to an additional means for determining varieties. Among the apples, however, I am inclined to think that variations in this particular are not only more frequent, but more marked or decided, than among the pears. The flowers of the "Genesee Chief" are strikingly large and handsome. When in full perfection, it has seemed to me, that, among the whole list of our ornamental trees, it would be difficult to find its rival. In its chaste beauty and delicacy, it is indeed the "queen of the orchard." The manner in which the flowers of the "Summer Queen" are put forth is remarkable; and I confess that I have not unfrequently met with specific distinctions based on variations much less marked and important. The blossom-buds do not appear to be formed the previous year, as those of the apple usually are, and are never distinguishable from the leaf-

buds after the falling of the leaves ; but the flowers are developed at the ends of the twigs on the new-formed or *growing shoot.* As a natural result, the trees are in full inflorescence after the falling of the blossoms from every other variety.

I do not see, Mr. Editor, why a tree or shrub cultivated for its *fruit,* and which we may be endeavoring to improve, may not also, in the process of amelioration, exhibit some change for the better in the *flower,* and *vice versâ.*

Anemones. — How pleasant to have an article that tells us all about a genus, treats of the wild and the cultivated species without confusing us with long Latin names or cultural directions we cannot understand ! You are sailing on the right tack, Mr. Editor, in giving us articles on popular flowers, like those of Mr. Rand's and Mr. Breck's : they supply a popular want, and the more we have the better. The illustration, too, is good ; but, oh ! if you could have given us the gorgeous color ! Shall we ever have a floral magazine with colored illustrations ? Another good feature Mr. Rand has introduced, is to give references to figures of the species mentioned, instead of dry descriptions : we want to *see* the flowers, and though our libraries may not be rich, like Mr. Rand's, in botanical treasures, we have the library of the Massachusetts Horticultural Society, which, thanks to the untiring labors of the library committee, and to Mr. Stickney's munificent donation, is daily collecting riches, and offers them to us all.

And speaking of illustrations, — O Mr. Tilton ! do give us a better cut of the pretty *Lilium longiflorum* than that on page 13. If well grown, it always has from two to four flowers ; and your poor single one looks as if in search of its departed kindred. Commend to us the article and its beautiful subject. Mr. Parkman should be crowned king of lilies and roses : his articles are always to the point, and tell us just what to do.

Potatoes at the West. — Your correspondent wields a pungent pen, and I like the article. But, Mr. Editor, a man that has the potato-fever, or any fever induced by indulging in horticultural pursuits, must be left to work his own cure. No febrifuge will avail any thing, and pleadings will be useless : it will run its course. I speak from experience. Your correspondent, however, is reminded, that, though there are numerous and even severe individual losses in such cases, still, in the re-action there is often a public gain. For myself, I confess there is a charm in new fruits, flowers, and vegetables, that I cannot easily resist ; and I admit I look with greater interest for the appearance of the annual catalogues of our seedsmen and nursery-men, than I do for the Atlantic Monthly or Harper's. As for the Early Rose Potato, up to this time of writing, never variety surpassed it in health, vigor, or general promise. Throughout the East, it everywhere exhibits the same perfection of growth, covering the ground with one mass of unspotted foliage. Taking into account the high cost of the seed, I do not know of a variety that I think could be grown to greater profit. From a small piece of ground in the vicinity of Boston, Mass., measuring only three hundred by one hundred feet, the owner has already harvested a hundred and sixteen bushels, which found a ready sale at two dollars the bushel on an average ; and there yet remains no inconsiderable portion to be lifted and marketed.

The Souvenir d'Esperen Pear is a variety possessing many good qualities,

though hardly up to the Émile d'Heyst of the previous number; but then we can't expect to have the best all the time.

Hillside Greenhouses. — Many a man, if he had hit on such an idea as this of Mr. Strong's, would certainly have patented it if he could; but he couldn't this year: and I think the subject of horticultural patents has received an effectual quietus for more than one year. Mr. Strong, however, is not the man to attempt to monopolize the benefit of such an idea, if he could. However, there is no doubt that this house will solve the problem of cheap forced fruit, and give us early grapes at twenty-five cents a pound, if any thing can.

Good for Balsams; and no one raises better than Mr. Breck. They are magnificent in the flower-garden when well grown.

Discrepancies of Strawberry-Culture. — Yes, we can find discrepancies enough in any kind of culture, if we look for them; it would be strange, if, in our wide country, with endless diversity of soil and climate, with no end of varieties, there were no discrepancies. But, suppose we look at the other side of the question, and see what we can all unite in. Is not it true, as a general rule, that the largest strawberries (of the same variety) grow on the richest soil? Is it not invariably true that strawberries grow largest in a wet season, like the present? and that they will not swell at all if the season is too dry? Is it not true, that in a deeply-worked soil they suffer less from drought than in a shallow soil? I do not think Mr. Morris would advise us, because a man whose beds were overrun with weeds had gathered more than double the crop of his careful neighbor, to permit weeds to grow in the strawberry-beds under any circumstances. Now, it strikes me, that here are a few principles established besides the two facts which Mr. Morris finds standing out so prominently. And when told that two parties adopting an identical mode of culture, having like soil, like seasons, and like varieties, have had very different success, I should answer that the likeness is only apparent; that we had not all the elements in the question, and, if we had, we should at once see the cause of difference. Perhaps it will be a great while before we shall be able to detect such mysterious influences; but I make no doubt that sooner or later we shall, and this statement of present discrepancies may well set us to studying out the agencies which now baffle our sight.

Those Pears in Devon, I think, are a little bigger than any of the same varieties have ever grown on this side of the Atlantic; but if anybody here has grown Winter Nelises to half a pound, and Beurré Clairgeaus to a pound and a quarter, I should like to know of it. But, though the moist climate of England swells up their pears so, I don't believe the flavor is equal to ours. Won't some of our Californian friends, who are so famous for big pears, tell us how large these varieties grow there?

The Lydie Thiérard Pear doesn't look to me as if it would ever be a popular orchard pear: but I am one of those who recollect the old Crassane with its spirited juice, as good after dinner as a glass of wine; and if this seedling from it is equal to the parent, it will be desired by every amateur who appreciates a vinous pear.

Hollyhock-Culture. — Attention called to a noble flower, and one which, joining forces with the gladiolus, has well-nigh driven the dahlia out of the field.

We rather like dahlias, however, in spite of their stiff rosette flowers; but we glory in hollyhocks, and are as fond of them as are the "bumble" bees. How effective they are in the landscape! what delicate tints they give us! Old-fashioned flowers with modern improvements, good, welcome, and showy, either as the tall spikes of single flowers, or the glowing masses of color the double varieties give us. *Bismarck.*

Strawberries in Rochester, N.Y. — We are indebted to a friend for the following interesting notes received by him from one of the largest growers in Rochester: —

"The cool, wet weather has been favorable for size and quantity, but not for quality.

"Triomphe de Gand has kept at the head, taking size, beauty, quality, &c., into account. Jucunda, in size and beauty, has been wonderful. Napoleon III., ripening now (July 8), is superb. Empress Eugénie, monstrous in size, but very irregular in form, and too dark. The foreign sorts have done better, owing to the peculiar season, than we have ever had them before.

"Ida, among the American sorts, promises well. Charles Downing is vigorous, productive, and of fair size, but hardly worth keeping. Nicanor was first in the market, and got the highest prices. Colfax is a curiosity, a monstrosity in size of plant and quantity of fruit; but the berries are small, and it will not rank among useful sorts. Michigan is a strong-growing, productive sort, but not destined to live long. We were out at Purdy & Johnston's, Palmyra, who have twenty acres of strawberries fruiting. They send all to New York.

"The weather is so wet, we cannot subdue the weeds; but every thing grows apace. The fruit-crop looks well."

Seed-Clubs. — The Canada farmers are forming themselves into seed-clubs, each one of the club to raise choice seeds of some kind for the rest of the members. A good idea.

Early Rose Potatoes. — A market-gardener near Boston paid thirty dollars last spring for a barrel of Early Rose Potatoes. From the produce, he has already sold a hundred and twenty bushels, at from two dollars to two dollars and fifty cents per bushel, and has a large quantity still on hand.

What Careful Cultivation will do. — An English farmer, by picking over his seed-wheat with the utmost care, and planting a grain in a place, at intervals of a foot each way, produced a hundred and sixty-two bushels to the acre.

The Harrison Potato. — *Mr. Editor*, — In the July number, p. 12, you give an opinion, that, in quality, this potato is below the standard required in a good table-potato. I am very glad to see this opinion expressed in your Journal, as it fully agrees with my own. Last fall, I put in for family use only this variety, and, at the price paid, found it the most expensive kind I ever used, besides being deficient in quality. *T.*

New-Zealand Spinach. — We copy the following interesting article from "The Gardener's Magazine," with such trifling changes as seem to be called for to better adapt it to our country: —

This plant resembles and is nearly related to the ice-plant; and its aspect is that of an ice-plant of a very luxuriant character and dense growth. The branches, which are green and tough, spread laterally, producing multitudes of short, leafy shoots, clothed with neat dark-green heart-shaped leaves, in the axils of which the dull, unattractive flowers are produced. These young shoots, or the separate larger leaves removed from the older stems, are taken for cooking, and, when served as spinach, are acceptable, but less grateful, and less prized by those who relish spinach, than the genuine vegetable. However carefully cooked, it lacks flavor, and is deficient in that peculiar taste for which spinach is so much esteemed.

Amongst the good qualities of New-Zealand Spinach we must certainly mention, first of all, its productiveness. It grows with great rapidity after it has acquired a certain degree of root-hold, and produces new shoots so freely, that it will bear to be continually cropped during the whole summer. Half a dozen plants will, as a rule, be enough for any family.

Another advantage is its adaptation to a dry soil and a dry, hot climate, in which it differs greatly from the true spinach. No matter how poor the soil or sunny the aspect, this plant will soon be clothed with dark-green verdure, thus rendering the dryest bank productive of a useful table-vegetable.

The seed is a hard, angular, bony nut, like many of the seeds of the ice-plant family. They are best sown in heat in March, and, like the tomato or egg-plant, set out in May. The plant thrives better in rich than in poor soil, and therefore it is not advisable to give it the worst place in the garden; at the same time, the most sunny position is essential. If not sown in heat, it may be treated as a hardy annual, but should be sown before the middle of April in the open ground. Seeds that we had kept in paper for ten years germinated when sown in heat, and afforded plants fully equal to those from new seeds; but the same old seed sown in April, May, and June, in the open ground, never yielded a single plant. For several years past, we have not taken the trouble to sow seed at all: we leave the ground untouched where the last crop stood. Early in May, it is covered with young plants from self-sown seeds of the previous year. A sufficient number of these are transplanted in showery weather, and the rest are destroyed, and the ground appropriated to other purposes. In the hot season of 1868, many of our plants of New-Zealand Spinach covered more than a square yard of surface each, and afforded tender spinach till late in autumn.

Steam-Ploughs. — It is stated that there are already three thousand steam-ploughs at work in England.

The Currant-Worm. — A horticultural friend suggests a trial of Scotch snuff to drive away the currant-worm, in place of the powdered hellebore usually recommended, and which, being poisonous, may, if it remains on the fruit, injure something beside the worms.

Too much Fruit. — There are some men in this world, undoubtedly sent into it for a wise purpose, who seem to be naturally and constitutionally croakers; and these gentlemen, from time to time, favor us with the pleasant information that the fruit business is either overdone or just going to be, and this is the story they have told time out of mind. They do not consider, that, besides the natural increase of population, the taste for fruit is much greater than formerly, and is constantly growing: so that the quantity which would have sufficed ten years ago is quite inadequate for the same number of persons now, and will be still more scanty ten years hence. But the best evidence that the supply of good fruit is not yet sufficient is the constantly-advancing price. The quantity of strawberries raised around Boston is variously estimated at from ten to twenty times as many as were grown ten years ago, yet the price has advanced from fifty to a hundred per cent. Pears are now raised by many growers by hundreds of bushels, while the time once was when twenty-five bushels was a great crop for one grower; yet the general complaint is of advancing rates, and some of the choicest specimens bring almost incredible prices. We remember when a dollar a dozen was thought a good price for the finest autumn pears; but probably as many pears are now sold for six dollars a dozen as were then sold for one dollar. Even the currant, which could once hardly be given away, now commands from fifteen to twenty cents per pound although it is most easily raised of all the small fruits; and the apple, once almost a drug in the market, now commands five and six dollars a bushel for fine specimens of the Williams and Gravenstein.

Large Collection of Potatoes. — A farmer in Southern Berkshire, Mass., planted this spring a hundred and thirty-six varieties of potatoes, all the known named varieties, except four, and he hopes to obtain these in time for planting. He proposes to thoroughly test them all, giving to each the same soil and cultivation, and carefully weighing the crop obtained in a rod of drill.

Budding Trees. — August is the month for budding, or, as it was formerly called, "inoculating" trees. There is one point apt to be neglected by beginners, because little understood by them, to which we desire to refer. They are sometimes surprised to find, after budding a lot of very thrifty young stocks, that almost every bud has failed, and are quite at a loss to account for it; but experience shows that the failure is caused by the over-luxuriance of the stock, and the thin, watery condition of the sap. If the operation had been deferred until the sap had thickened, the result would have been reversed, and, instead of only one in a hundred succeeding, there would have been only one per cent of failures. The cherry is more liable than any other fruit to "drown out" the bud, as it is called; and the best time to bud cherry-stocks is just as soon as they begin to slacken their growth, and show a yellow leaf here and there. If this time is chosen, and the work done skilfully, there need be little fear of failure. Trees which are not growing vigorously should be budded early. As soon as wood sufficiently ripe to furnish buds can be found, will frequently not be too early. When a large quantity are to be budded, the work should be taken in hand early, so as to get through in season, commencing with the least thrifty.

Messrs. J. E. Tilton & Co.

Gentlemen,— I have carefully watched the President Wilder Strawberry this season, and am better pleased with it than ever. I have seen the fruit grown on Col. Wilder's place, and that raised by the person who is propagating the plants for you, and I feel that all I have ever said of it will prove true. It is a valuable variety. Yours truly, *James F. C. Hyde.*

Boston, July 15, 1869.

The Best Varieties of Strawberries. — No new variety of unquestionable excellence has been introduced during the season just past, except the President Wilder; but the general experience confirms the opinions previously held as to the leading varieties. Among the earliest sorts, nothing has yet been found to supersede the Jenny Lind; though only moderately productive, it is of good form, fine color, and pleasant, sprightly flavor. Brighton Pine is also a favorite with many as an early variety. One of the best cultivators near Boston remarked, that, if profit is sought, there is more money in the Wilson than in any other, or in *all* others. Next to Wilson for productiveness comes the Lady of the Lake; but, while the Wilson has an excess of harsh acid, this is deficient in flavor. Triomphe de Gand holds its place as a berry combining large size and fine quality, although it is well known to be of bad shape; and Hovey's Seedling has not lost the hold on public favor which it has maintained for so many years. Jucunda has been found to succeed best when grown in hills, fine crops having been produced by this method; and we think it has grown in estimation. Enormous specimens of Agriculturist have been exhibited at the shows of the Massachusetts Horticultural Society, by Capt. J. B. Moore of Concord. Those we have named comprise all which experience has shown to be worthy of general cultivation in this vicinity. We do not mean to say that no others possess any merit: there are many which may be adapted to peculiar tastes or particular soils, or have some other characteristic which may keep them in cultivation to a limited extent; but, of the hundreds of varieties that have been raised since Hovey's Seedling, the greater part have already fallen into oblivion; and the same fate will soon overtake most of the remainder. And here we must say a word in condemnation of the too common practice of pushing into market new fruits, which, by dint of persistent puffing, achieve a transient popularity, but which, being soon found to possess no special merit, are soon forgotten. No doubt, hundreds of new fruits entirely unworthy of cultivation will be puffed into notoriety this year and next year and every year, until buyers learn to examine carefully the claims of every new aspirant for favor. We wish that more of the originators of new fruits would imitate the example of Mr. W. J. Underwood of Belmont, who has raised a seedling strawberry, which, after four years' trial, he finds to possess great excellence; but, not being sure of its superiority, he will subject it to further tests, when, if found a decided improvement, it will be sent out, but otherwise it will be thrown away without hesitation, and all the time and labor spent on it will be sacrificed rather than impose on the community a fruit which is no advance on those previously in cultivation.

We shall hereafter give descriptions, with engravings, of the most promising new varieties.

Visit to Glen Ridge. — On the 10th of June, we visited Glen Ridge, the residence of E. S. Rand, jun., Esq., so well known to the readers of the Journal for his most instructive articles on the cultivation of flowers, in doors and out. We cannot doubt that many who have read Mr. Rand's communications have often felt a curiosity to see the place where all the experience so freely given was acquired ; certainly we have, and so, when invited by the Garden Committee of the Horticultural Society to accompany them, we most gladly accepted the invitation. The approach to the house is through an extensive addition which has lately been made to his grounds, which was in quite an unfinished state ; but this, however, gave us an opportunity to see how thoroughly the improvements which have been commenced are made.

The great attraction at the time of our visit was the rhododendrons, of which Mr. Rand has probably the largest collection of varieties, and the largest plants, in the country, including the newest varieties and the most unique colors. We saw several very fine trees trained as standards, which, although imported from England only last year, were covered with flowers. Among the finest varieties we noted the names of *atrosanguineum*, *Vandyke*, *roseum superbum*, *Brayanum*, *purpureum elegans* and *grandiflorum*, *concessum*, and *Minnie* (the last not yet proved hardy), and many others.

Mr. Rand next led us through a path bordered on one side with a raised bank planted with thriving young rhododendrons, which, to our astonishment, he informed us had formerly been the entrance avenue, and the magical change which we beheld had all been effected within six weeks. Retracing our steps towards the house, we came upon another mass of rhododendrons, including some of the hardiest and showiest kinds, such as *roseum elegans*, *album elegans* and *grandiflorum*, *Everestianum*, *purpureum grandiflorum*, *giganteum* (perfectly hardy, and of fine color), and *coriaceum*, one of the best whites, and also perfectly hardy.

Our visit was made at a late hour in the afternoon, in the hope of viewing the ground by the sunset light ; but a cloudy sky, with portents of a shower, deprived us of the finest effect : yet, looking up the valley from the piazza, we could imagine how charming the view when glorified by the light of the setting sun.

Our limited time permitted us to examine but a few of the fine ornamental trees and shrubs upon the lawn ; but we did not overlook the splendid specimen of the cut-leaved beech, and our attention was called to its tendency to return to the original type, shown by an occasional branch with leaves of the ordinary shape. A group of *Andromeda Catesbæi* was flowering profusely ; but this pretty shrub has the drawback of an unpleasant odor, somewhat resembling that of the ailanthus. We also noticed fine plants of *Andromeda floribunda* and *polifolia*, and clumps of *Kalmia*.

We were particularly interested in the plum-trees, of which Mr. Rand gave an account in the Journal for July, 1868 ; and the appearance of the trees showed that he had not lost faith in dusting with lime as a preventive of the curculio ; and the promise of fruit showed that he has reason for his faith.

Only want of time prevented us from noticing many more objects of interest; but we trust to do this on some future occasion, for Mr. Rand's hospitality both in his house and grounds may well induce us to repeat our visit.

The Lady of the Lake Strawberry. — On the 25th of June, we paid a visit of an hour to the grounds of Messrs. Scott of Brighton, to examine their crop of the Lady of the Lake, which was described and figured in "The Journal of Horticulture" for August, 1868. It is deficient in flavor, and rather soft; but in productiveness it probably surpasses any other, unless it is the Wilson; and on Messrs. Scott's grounds it succeeds even better than that variety, having produced at the rate of six thousand and four hundred quarts per acre. It was originated by the father of the Messrs. Scott, who also raised the Brighton Pine. We saw also another seedling, which, however, is not thought equal in value to their named varieties; but, bearing a perfect flower, it was used for fertilizing the Lady of the Lake, which is pistillate. A row of the old Mulberry, seldom seen now, was interesting as one of the parents of Hovey's Seedling. Messrs. Scott have twelve acres in strawberries, and, at the time of our visit, were picking twelve hundred quarts per day.

The Romeyn Strawberry. — This variety is universally admitted to be very similar to Triomphe de Gand; and, for our part, we believe them to be absolutely identical. But, even admitting that some slight shade of difference can be found, they are still practically identical; by which we mean that they are so much alike, that he who grows one can have no need for the other. And this leads us to remark, that, for a fruit to be worthy of general introduction, it is not enough that it should be good and desirable in itself; it must be *distinct*. What possible profit could it be to the public (however it might be to the grower) to have a new fruit introduced, which was merely a reproduction from seed of an old variety, no matter how good, whether Triomphe de Gand Strawberry or even the Bartlett Pear? The public would obtain nothing which it did not possess before. Few people have the patience, and we may say the courage, of Col. Wilder, who, after raising seedlings for twenty years, threw them all away, because there was not one of which he could say that it was decidedly superior to any kind known; and then waited, until, on the introduction of La Constante, his practised eye detected new properties, especially fine form, which he thought might be combined with those of the Hovey so as to produce a superior variety. Encouraged by the possession of these new elements to try again, he has, after the lapse of thirty years from the initiation of his experiments, found his sagacity justified and his patience rewarded by the production of the best of all strawberries, particularly in form and color, which are the points where improvement was especially sought.

Deep Tillage of Orchards. — The cry is now, "Keep the roots near the surface, where they will get warmth and light and air." No doubt this is a correct principle, which has been overlooked, and the surface-roots have been injured by ploughing and digging; but it is just as true as ever it was, that trees must have moisture, and in a drought they need some long roots running below the dry soil, to supply it. Then let us try and keep both truths in sight, and prepare our ground, stir it thoroughly and deeply before planting, and, after planting, encourage the growth of surface-roots.

Gloede's Strawberry Catalogue. — I have received the strawberry catalogue of Ferdinand Gloede of Beauvais, France, for 1868–69, and notice the following novelties : —

The Ascot Pine-apple (Standish), a moderate-sized conical berry, described as "*fraise exquise;*" the Avenir (Dr. Nicaise), a berry of the Marguerite class; the Belle Bretonne (Boisselot), a large, obtusely-conical fruit ; La Chatelaine (Le Beuf) ; James Veitch (Gloede), marked by a strong apricot flavor ; Princess Dagmar (Clements), a large round, slightly irregular berry ; and the President Wilder (De Jonghe), which has already been figured in this magazine, vol. v. p. 60. The Triomphe de Paris (Souchet), a very large flattened berry, is put among the novelties, although belonging to the previous year, on account of its surpassing qualities.

The novelties not figured are Belle Lyonnaise (Nardy), Mrs. Wilder (De Jonghe), Othello (Clements), Ravis (Dr. Nicaise), and Scarlet Queen (Standish).

Among the best of the previous year are Belle Cauchoise (Acher) ; Dr. Hogg (Bradley), a most ungainly fruit, if we may trust the drawing ; Her Majesty (Clements); Monsieur Radclyffe (Ingram) ; and Jeane Hachette (Gloede), the last apparently a very beautiful strawberry.

A new strawberry, the Janus (Bruant), is figured and described as bearing from spring till frost.

Among the Chilian berries we find the utterly worthless and deceptive Lucida Perfecta, and, farther on, the equally useless Madame Collonge.

The only American varieties advertised are Hovey, Jenny Lind, Fillmore, Eclipse (Prince), which we were deluded this year into buying as a novelty. Possibly, however, the Eclipse we have is Reeves's.

A variety is described as the White Pine-apple, which is undoubtedly Lennig's White. Gloede's Perpetual Pine is offered as the first variety of Pine Strawberries that fruits twice a year. The Gen. Havelock is given as synonymous with the Cremont (?). The Lawton Blackberry is offered at four francs per single plant.

The catalogue of strawberries is arranged on some system we cannot understand, and seems to us completely confused. *J. M. M., Jun.*

Grass in Orchards. — We fear that some careless farmers may, from what has been lately said of the benefit of grass in an orchard under certain circumstances, be led to suppose they may leave any orchard to sod, and all the neglect that generally accompanies it. Understand, then, my indolent friend, that it is only when an orchard is vigorous to excess, that we recommend seeding down to grass or clover as a means of checking its redundant vigor, and *your* orchard is not very likely to be troubled with that complaint : indeed, there is not much danger of its becoming very prevalent ; we wish we could say there is, for it would be a refreshing contrast to the starved, mossy orchards that we have too many of. Even the best cultivators do not often cultivate too well ; but sometimes we find a case, where, from over-manuring or a naturally rich soil, the trees have become too luxuriant ; and it is for such exceptional cases as these that we recommend keeping the ground in sod for a longer or shorter time as may be required to check it.

New Plants. — *Oncidium Macranthum*, Large-flowered Oncidium (Bot. Mag., t. 5743). — Orchidaceæ. A magnificent species of gigantic proportions. The flowers are in panicles two to three feet long, and each flower measures three to three and a half inches across. The prevailing color is deep gamboge-yellow, with purple lip.

Parrotia Persica, Persian Parrotia (Bot. Mag., t. 5744). — Hamamelideæ. One of the rarest trees in cultivation. It is a native of Northern Persia, quite hardy in this country.

Agalmyla staminea, Long-stamined Agalmyla (Bot. Mag., t. 5747). — Cyrtandraceæ. A brilliantly-colored stove-plant, native of Java, which flowered at Kew in June last.

THUNBERGIA FRAGRANS.

EPIMEDIUM ALPINUM.

Thunbergia fragrans, Fragrant-flowered Thunbergia (L'Illust. Hort., t. 511). — Acanthaceæ. A charming stove climber, identical, no doubt, with *T. laurifolia* of Lindley. The leaves and flowers are both above the average size of other species in cultivation. The flowers are white, resembling those of *convolvulus sepium*, and they emit a delightful spicy odor. Mr. B. S. Williams first introduced this plant to English gardens.

Epimedium alpinum, var. *rubrum*, Red-flowered Barrenwort (Bot. Mag., t. 5671). — Berberideæ. A very elegant hardy plant, adapted for the shady border or rock-work. Native of Japan. In his note on this pretty plant, Dr. J. D. Hooker says, "It is very much to be desired that plants of the habit of growth of the one here figured should be more extensively cultivated. Their forms are peculiarly graceful, and suitable for pot-culture and table-decoration. Their bright foliage is rigid, and retains its appearance uninjured for weeks, whether in doors or out of doors, and nothing can excel the delicate grace of the panicle of nodding flowers. There are several other species of epimedium equally

deserving of culture, as *E. macranthum*, *E. musschianum*, *E. pinnatum*, *E. violaceum*, and *E. diphyllum*. All are hardy, all are suited for decoration, and a collection of half a dozen of the spring-flowering species brought forward into flower at the same time by a skilful gardener would deservedly command a high award at any horticultural exhibition." Yes, but when shall we see makers of schedules display so much sense and good taste as to offer a prize of any kind for such charming but unfashionable things as epimediums ?

Iberidella rotundifolia, Round-leaved Iberidella (Bot. Mag., t. 5749). — A lovely cruciferous plant, adapted for the rockery, native of the Alps. It grows in humble tufts, and throws up crowded racemes of pale lilac flowers.

Tacsonia eriantha, Woolly-flowered Tacsonia (Bot. Mag., t. 5750). — A noble passion-flower, resembling in habit and color of flower the well-known *T. mollissima*. The leaves are of a pale green, the flowers pale, cheerful pink. As a greenhouse or conservatory climber, it will be valuable, as it is comparatively hardy, and flowers freely.

Stapelia hystrix, Bristly-flowered Stapelia (Bot. Mag., t. 5751). — An asclepiadaceous plant, closely allied to *S. glanduliflora*. The flowers occur two or three together, the corolla one inch in diameter, pale sulphur-colored, marked with innumerable purple lines.

Thibaudia acuminata, Sharp-leaved Thibaudia (Bot. Mag., t. 5772). — A fine ericaceous plant, native of the Andes, from eight to ten thousand feet. A branching leafy evergreen shrub. The flowers in terminal racemes, tubular, of a bright red color, with green tips.

Cœlogyne (*Pleione*) *Reichenbachiana*, Dr. Reichenbach's Pleione (Bot. Mag., t. 5753). — The finest species of the Pleione group of Cœlogyne known. The pseudo-bulbs are pitcher-shaped and mottled ; the flowers comparatively large ; the colors white and palest rose.

Oncidium xanthodum, Golden-toothed Oncidium (Bot. Mag., t. 5766). — A remarkably fine orchid ; the flowers in a slender twining scape, six to eight feet long, of a rich chocolate-brown color, with golden crisped and crenate edges.

Delostoma dentatum, Toothed-leaved Delostoma (Bot. Mag., t. 5754). — A beautiful bignoniaceous plant, with the habit of a Gesnera. Native of Quito. It is a small shrub. The leaves are broadly oblong, four to five inches long ; the flowers two inches in diameter, white suffused with pale rose.

Kæmpferia Parishii, Mr. Parish's Kæmpferia (Bot. Mag., t. 5763). — A pretty representative of the Scitamineæ, native of the forests of Moulmein. The flowers are purple and white ; they appear before the leaves.

Dendrobium Williamsonii, Williamson's Dendrobe (Gard. Chron., 1869, p. 78). — Orchidaceæ. A beautiful orchid, introduced by Mr. W. J. Williamson from Assam. The flowers are in the way of *D. eburnea*, with brownish sepals and petals, lip white with red spot ; strong, upright habit.

Trichopilia grata (Gard. Chron., 1868, p. 1338). — Orchidaceæ. A pretty trichopilia, introduced from Peru by Messrs. Veitch & Sons, bearing yellowish-green and white flowers.

Oncidium (*cytrochilum*) *Xanthodon* (Gard. Chron., 1868, p. 1338). — Orchida-

ceæ. An interesting orchid, introduced from Western South America by Messrs. Backhouse, with small brown and yellow flowers.

Aglaonema Mannii, Mr. Mann's Aglaonema (Bot. Mag., t. 5760). — An interesting arad from tropical Africa. It has a stem two feet high, leaves five to seven inches long, and spathe two inches long ; white, scarcely attractive.

Amomum sceptrum, Sceptrate Grain of Paradise (Bot. Mag., t. 5761). — A beautiful plant from the Gaboon River. The leaves are eight to ten inches long, the flowers three inches long, of a bright rose color.

Campanula isophylla, Ligurian Bell-flower (Bot. Mag., t. 5745). — A beautiful and rare hardy herbaceous plant, native of the ancient Liguria, as the dis-

CAMPANULA ISOPHYLLA.

trict between the Gulf of Tuscany and the Apennines was called. The flowers are of a most lovely blue color, and last a considerable time.

Cypripedium Harrisianum (Gard. Chron., 1869, p. 108). — Orchidaceæ. A grand hybrid raised by Mr. Dominy, Messrs. Veitch's skilful foreman at Chelsea. It is exactly intermediate between *C. barbatum* and *C. villosum*, possessing the large, stout glossy foliage and flowers of the latter, with the richly-colored markings of the former.

Vanda insignis, Noble Vanda (Bot. Mag., t. 5759). — A noble orchid, "one of the most interesting importations of late years. It settles a long obscure point in the garden nomenclature of this novel genus, proving that the plant

which has hitherto usually borne the name of *V. insignis* is not the plant of Blume, but, as was often suspected, a form of *V. tricolor;* and that Blume's plant is not only a perfectly distinct species, but as fine a one as any in the genus, *V. Cathcartii*, perhaps, alone excepted." It is a native of the Moluccas.

Allamanda nobilis, Noble Allamanda (Bot. Mag., t. 5764). — A magnificent plant imported from the Rio Branco by Mr. Bull of Chelsea, and certainly one of the finest stove climbers in cultivation. Dr. Hooker says, "As a species, I doubt very much its proving distinct from *A. Schottii*, *A. grandiflora*, *A. aubletii*, and *A. Hendersonii;* but as a horticultural acquisition, it differs from all these, and surpasses them individually, either in habit, or the large size and full green of the foliage, or in the very large flower, its regular contour and bright color, or in the number of flowers produced, or in their magnolia-like odor — altogether rendering it one of the most gorgeous free-flowering stove-plants introduced into Europe for many years past." The flowers occur in six to eight flowered axillary racemes; the corolla is four to five and a half inches across; the color fine golden yellow, with pale spot at the base of each segment.

Cyclamen Africanum, Algerian Cyclamen (Bot. Mag., t. 5758). — An extremely beautiful and large variety of one of the European kinds, probably *C. Neapolitanum*. The roots sometimes attain the size of a large turnip. The flowers are white with purple tinge, and deep purple spots at the base of the petals. — *Floral World.*

New Golden Coleuses. — The value of the coleus for ornamental purposes is well known, whether the object be the decoration of the stove, or the ornamentation of the dinner-table; and they have the additional merit of being grown easily.

Many of the varieties recently offered are decided acquisitions, their colors being of the richest, embracing many shades of glowing red, and rich dark crimson. The following varieties are doing well with me, and, as they are quite distinct from the older sorts, they are all the more valuable: —

Albert Victor. — The centre of the leaves bronzy-red, with a very broad gold margin, and on the extreme margin a narrow red line. Very free in growth, and of good habit. While showing it to a gentleman to-day, he said, "Every leaf is a bouquet of itself."

Baroness de Rothschild. — This variety is much like the preceding; the only differences which I see, are that the foliage is much longer, and deeper in color. This is the gem of my collection.

Princess Beatrice. — The leaves are of a golden-green hue in the centre, marked and partially veined with crimson; the edge is also marked with a belt of crimson. This is a very beautiful variety, and very distinct.

Princess of Wales. — I very recently saw this variety exhibited at the gardener's show at Maidstone; but it is not so distinct or so good as Princess Beatrice.

Telfordii aurea. — I have grown this variety in a brisker heat. I have tried different soils, but have not succeeded in making it equal *Plectranthus concolor.*

The season for bedding-out is just commencing; we shall then be able to prove the value of the new coleuses as bedders. — *F. P. L., in English Journal of Horticulture.*

New Roses of 1869. — A little information on this subject, acquired during a short visit to Mr. Keynes's Salisbury Nursery, may possibly be interesting to some of your readers. In his trade-list of new roses for 1869, there are thirty-two varieties ; twenty-seven Hybrid Perpetual, four Tea, and one Noisette Rose. These I saw under glass in various stages of growth ; most healthy-looking plants, though, unfortunately, none in flower.

The very intelligent foreman, Mr. Gill, mentioned to me the following, most of which had bloomed, as among the most promising : Bertha Baron (seedling from Jules Margottin), Charles Lee, Julia Touvais, Madame Creyton, Marquise de Mortemart, Perfection de Lyon, Thyra Hammerich, Victor le Bihan, and Monplaisir. Monplaisir is a tea-rose, raised by Ducher, a seedling from Gloire de Dijon ; it is described as "very dark salmon-yellow, large and vigorous." Mr. Keynes had not seen it in flower, but had propagated it very largely, expecting it to be one of the best of the season. I was shown one of the parent stocks, which was certainly a noble plant, considering all the cutting it had gone through, and with a four-feet-long shoot of true Gloire de Dijon robustness. The Marquise was also highly spoken of as an improved Mdlle. Bonnaire, of the same character, but larger and fuller. This was raised by Liabaud, who thus describes it : "Fresh satin white, flesh-color in centre, large and fine, vigorous, seedling from Jules Margottin." A new and interesting feature this year in the establishment was a considerable number of English seedling roses, which last year's fine rose-harvest has tempted Mr. Keynes into propagating. They had only been sown in moderate heat this spring, but were already, many of them, of considerable size, beautiful little plants, and even some of them with tiny buds, and showing that red would be the prevailing color. A greater contrast than these to the painful and tardy growth of rose-seeds in the open border, and among all their various enemies, it is not easy to imagine. There seems reason to hope, that, in a year or two, we shall hear, from more quarters than one, of some new and good English-raised roses not unworthy rivals of Devoniensis and John Hopper. In such honorable company we shall all be glad to rank a new friend from Salisbury, let us say the "Wonder of Wiltshire," or a "Keynes's Seedling." — *A. C., in Idem.*

New Hardy Azaleas. — Hardy azaleas are amongst the sweetest and most brilliant of the flowering American shrubs which render our garden scenes so enchanting in the merry month of May. Forty years ago, the original species, and their immediate progeny, might be seen yielding their masses of golden and fiery and roseate hue, to lighten the dark masses of evergreen rhododendrons, with which, then as now, they were commonly associated. After that, the Continental cultivators took up the improvement of the azalea ; and the Ghent varieties of some twenty years since revived for a while its popularity. But, with the onward march of fashion, it seems to have been again left in the rear, and for the most part unheeded by the masses, though not uncared for by those who knew its worth. Hence we were not surprised, some two or three years since, on visiting the Knaphill Nurseries, one of the earlier and still one of the most pleasant homes of "American plants," to find that the breeding of improved

azaleas had been for some time going on quietly, and that, as a result, a number of novelties of sterling merit had been obtained. It is two of these which we now describe by permission of Mr. Anthony Waterer.

These grand acquisitions, which occur in considerable variety of coloring, are, as we understand, partly the result of a judicious intermixture of sinensis blood, and partly the result of selection and of seeding on from the best varieties. Not only the quality of the flowers but the habit of the plant has been cared for, and in this way have been secured varieties which combine with larger, more brilliant, and better-shaped flowers, a vigor of growth which enables them to develop their blossoms freely. The new sorts have this further recommendation, that instead of blooming early, and having in great measure faded before their associates, the rhododendrons, come into flower, they bloom contemporaneously with the latter; and it need scarcely be pointed out that their brilliant tints, of orange and red especially, are particularly valuable from the fine contrast they present with the colors familiar amongst rhododendrons. Their early-blooming habit was in fact one of the chief drawbacks of the primitive azaleas of our boyhood, and this is now in great measure removed by the introduction of Mr. Waterer's new varieties.

We may also mention that in the same collection are some wonderfully fine double-flowered varieties. One which we particularly noticed, an exquisite shaded orange, was much brighter and more attractive than the well-known Van Houttei.

Nancy Waterer is of vigorous growth, producing contemporaneously with its leaves fine trusses of deep orange-yellow flowers, which are larger and richer colored than in any yellow previously obtained; the coloring being most intense in the three upper segments. In this, the flowers are fully two inches across, and sweet-scented.

Bessie Holdaway is a lovely flower, sweet as violets, but scarcely so large as the foregoing; the flowers being about an inch and three-quarters broad, and of a clear, lively rose-color, the upper segment being freely spotted with bright orange. Many other equally beautiful forms have been obtained; and, as the process is still going on, we may expect in the future to see the hardy azalea again occupying a very conspicuous place in our American gardens. — *M., in Florist and Pomologist.*

ADIANTUM CONCINNUM LATUM. — We have latterly had some very choice additions to the family of maiden-hair ferns, thanks to the discoveries of the Messrs. Veitch & Sons' collectors. One of these novelties is closely related to *A. concinnum*, having the pinnules of the same character, both as regards form and position; but the frond is much broader, and hence the variety has been named *A. concinnum latum*. Its points of difference, besides the greater comparative breadth just alluded to, are the stouter rachides, and stiffer growth of the fronds, peculiarities which are very well shown in the accompanying figure. It was introduced from Niana in Peru, by the late Mr. Pearce, and requires a cool stove. It is a fine plant both for exhibition and decoration, and has gained, as it deserved, the highest honors at our floral competitive exhibitions. —*Florist and Pomologist.*

ADIANTUM CONCINNUM LATUM.

Culture of Clerodendron Thomsonæ and Balfourii. — They are both stove climbing-plants, and require a stove temperature. At this season, water should be sparingly given ; and, by full exposure to light, secure the ripening of the wood. In winter, give no more water than enough to keep the wood plump. In February, perform whatever pruning may be required, thinning out the old wood, and shortening the long shoots, but leaving enough of the young shoots of last year ; and, when they begin to push, encourage their growth with moisture and an increase of temperature. When the plants have shoots a few inches long, repot, removing all the old soil as far as it can be done without injury to the roots ; and use a compost of two-thirds fibrous loam from turf, and one-third sandy peat, with a free admixture of sand. Good drainage must be given. If convenient, plunge in a hot-bed, taking care not to make the soil very wet, but only moist, shading from bright sun, and keeping the atmosphere moist. When the plants have become again established, encourage them with plenty of heat and moisture, affording a light situation ; and regulate the shoots, training them thinly rather than very closely together.

Allamanda grandiflora. — This, the best of all the allamandas, is of comparatively easy culture, provided it is worked on *Allamanda neriifolia*. A young, healthy plant started into free growth at this time would form the foundation for a nice specimen for blooming next summer. If well rooted, it should immediately be shifted into a pot one or two sizes larger (according to the strength of the roots), using a compost of one-half leaf-mould, one-fourth loam, and one-fourth made up of equal portions of peat and silver sand, all being mixed well together. Provide ample drainage, above which place some rough, fibry peat or leaf-mould to keep the drainage from becoming choked. Pot moderately firm, and place the plant in an ordinary stove temperature, near the glass. Syringe night and morning, and attend well to watering up to the end of September ; water should then be gradually withheld until the foliage is off, after which just sufficient water should be given to keep the ripened wood from shrivelling. About the beginning of February, turn the plant out of the pot, and reduce the ball as much as can be done without injury to the roots, and repot in fresh compost such as that before recommended. Place the plant in a temperature ranging from 60° to 70° ; use the syringe freely, and be careful to keep the ball in a proper state as to moisture. The plant will soon break freely ; after which manure-water should be given. As soon as the plant gets into free growth, a liberal shift will be required ; after which it will soon throw out laterals from the new growth, and produce abundance of its beautiful pale-yellow blossoms for weeks in succession.

Among recent acquisitions in the shape of ornamental trees of a distinct character, a variety of the common elm, called *Ulmus campestris Webbiana*, may be strongly recommended. The leaves are small, and curiously folded, so that the pale color of the lower surface is made to contrast with the deeper color of the upper surface. As a standard, this new variety promises to be very useful for ornamental purposes.

Growing Pansies in Pots. — This beautiful flower is so easy to grow in pots, that I cannot help wondering why more of our amateurs do not take them in hand. Without doubt, they would be rewarded with a delightful display of floral beauty in the spring. The pansy is not only superior in point of beauty to many plants that are more popular, but far less trouble is necessary in preserving it through the winter if a cold frame is the only structure the amateur has to keep his plants in. I will detail my way of dealing with these plants, and by which I have been very successful in growing them; and I feel assured, that, if the rules that I shall lay down are strictly observed, it will be the grower's own fault if he does not succeed to his satisfaction. The first thing to be thought about is getting a stock of the best varieties. I will add a list of some of the best of my stock as a guide to the beginner in these matters. As I said before, the first thing to be thought about is getting a stock. There are several ways of managing this. The proper way is to take as much money in your hand as you can afford, and go to a respectable nursery-man, and either leave the selection in his hands, or hand in the list which will be found at the foot of these remarks. For my own part, if I did not want any particular kind, I would sooner leave the selection in the hands of the nursery-man: generally speaking, plants of every description can be bought much cheaper this way than by picking them out by the purchaser. It often happens, that, when a certain list is sent in, several of the varieties named therein may be sold out, or a failure may have happened in propagating them: the consequence of this is, the nursery-man has to go to an immense amount of trouble and expense to make up the list, and, consequently, is unable to make any reduction from the catalogue price. Nine or ten shillings per dozen will purchase a good selection at a nursery in which they are made a speciality. Another good way — good because cheap — is to go to a friend, and beg a few cuttings of the best of his stock.

Supposing the latter method is adopted, I will say a few words upon this branch of the subject. Besides, it is desirable to know how to propagate these plants; for it will be necessary to strike a fresh stock every year; for the young plants are more vigorous, and the flowers are finer, than those from old plants. It is getting rather late to strike plants intended for pots to bloom next spring; but, if no time is lost, good plants can be grown even now. As a rule, it is best to begin some time in June, and have the whole of the cuttings by the end of that month. I shall suppose that you have a cold frame, or a hand-light that can be spared. Well, make a bed about nine inches in thickness in either of these for the purpose of receiving the cuttings. It should be composed of about an equal proportion of fibrous loam and leaf-mould, and a good sprinkling of sand mixed therewith, and a layer of the latter over the surface. Silver sand is certainly the best; but good clean river sand, free from mud, will do very well. After the bed is ready, and has had a fair watering to settle the soil, dibble the cuttings in rows three inches apart, and about one inch from each other in the rows. This done, give the bed another sprinkle through a fine rose, and shut up, shading the cuttings in bright weather; attend to them with water when necessary, and give air as soon as they are rooted; finally removing the lights altogether a few days before planting out into a bed in the open air, which must

be done directly the cuttings are nicely rooted. Dig the bed deep, and give it a good dressing of rotten manure; select a position for it which is moderately cool, and partially shaded through the hottest part of the day; give plenty of water should the weather continue dry after the plants are turned out. Prepare a quantity of soil composed of two parts turfy loam, and one part decayed cow-dung and leaf-mould in equal quantities: this being done, prepare a sufficient quantity of three-inch pots by making them thoroughly clean, and placing several pieces of small crocks in the bottom; and take up the plants, and pot them in these pots about the end of September, and remove them to a cold frame, where they must remain through the winter months, standing on a layer of coal-ashes to prevent the worms getting into the pots. They ought not to be more than nine inches from the glass. Keep the frame rather close for a few days after they are newly potted, to assist their recovery as quickly as possible; after this, give plenty of air at all times, excepting during sharp, frosty weather, when it is as well to throw a mat or a little dry litter over the frame to afford a little protection. In February, shift into six-inch pots; and then, after they are nicely rooted in the new soil, remove the lights altogether in fine weather, and tilt them back and front in wet weather. Though the pansy requires an abundance of air, it must not be exposed to the drenching of heavy rains. Water must be cautiously administered throughout the winter, increasing it as the spring advances and the plants get into more active growth. Avoid manure-water, and trust to pure rain-water; then there will be very little fear of losing any of them. Full half the plants that die are killed through the too liberal application of liquid manure. When in bloom, shade slightly, to keep the flowers in good condition as long as possible; and after observing that it is as well to make the soil, when potting, moderately firm without being made too hard, nothing remains for me to say beyond giving my selection, which the grower can add to when he is better acquainted with pansy-growing. For the present, he cannot do better than select the following: —

Selfs. — Snowball, Golden Queen, Othello, Masterpiece, Yellow Queen.

Yellow Grounds. — Allan Ramsay, De Foe, Emily Lyle, Francis Low, Gem, George Wilson, J. B. Downie, John Inglis, Mrs. Downie, Norma, Prince of Wales, William Austin.

White Grounds. — Attraction, Countess of Rosslyn, Elvina, Invincible, Jessie Laird, Lady Lucy Dundas, Mary Lamb, Miss E. Cochran, Miss Williamson, Mrs. Moffat, Queen, and Village Maid. — *J. James, in Floral World.*

SOMEBODY asks how long a tree will live after being girdled. I answer: In one of our nursery-fields stand two walnut-trees near each other. One was girdled some six or eight years ago; the bark being removed for some four feet on *all sides*, and the tree chopped into a good deal. This tree puts out its foliage about two weeks later than its neighbor, but bears a crop of fruit each year. No new bark has formed, and the wood is dry, cracked, and apparently dead. *T. T. S. and Co.*

DANSVILLE, N.Y.

A CORRESPONDENT thus writes to "The Florist" on the hyacinths of 1868: The new varieties of hyacinths have been plentifully shown during the present season; though, as in the case of other flowers, the new introductions are not always improvements on existing kinds. The best our exhibiters can do is to obtain the very best flowers possible; and though, as an invariable rule, the class for new kinds does not furnish such fine flowers as those for older varieties, it is, nevertheless, one of considerable interest for the florist.

I propose to group the new flowers according to the shade of color, in order to give as clearly as possible some idea of their relative value. The best flower of the year is a yellow, called *King of Yellows* (W. Paul); perhaps, in point of color, the best single yellow hyacinth in cultivation, and having well-shaped bells of a deep citron hue. The spike is close and good, and the habit excellent. Awarded a first-class certificate. *Luna* (Cutbush) is also a single yellow in the way of Ida, but slightly darker, the bells stouter, and more rounded. *L'Or d'Australie* is a slightly deeper form of Ida; the spike, however, neither so fine nor so symmetrical.

Prince Albert (Cutbush) is a fine addition to the double blue class. It is something in the way of that good old flower Laurens Coster as to build, but has the fine dark glossy hue of the single General Havelock: the color is a deep glossy dark purple, and the flower is quite distinct in character. *Von Siebold* (Cutbush) is a pale form of that fine single variety, King of the Blues, but, being whiter in the centre, has a more lively appearance. *Vulcan* (Cutbush) is a single variety of a glossy black shade, like Prince Albert, but no better. *L'Espérance* (W. Paul) also resembles King of the Blues, but is paler, and has more white in the centre, and yet differs from Von Siebold just noticed. *Clio* (W. Paul) is a very pleasing single blue variety in the way of Lord Palmerston, with more color in the tube, though with less in the segments, and having a whiter centre; the bells are stouter, and of a better shape, but the spike, as shown, was small and ill shapen: awarded a first-class certificate. *Lord Derby* is a darker form of Lord Palmerston, but not so good as Clio. *Amazon* is much in the way of Marie, but with a paler centre, and not so good.

The light-blue flowers are very plentiful, and consist, in the main, of pale-colored flowers in the way of Princess Mary of Cambridge. Of these, first-class certificates were awarded to *Grand Monarque* and *Couronne des Bleues*, both from Mr. Paul. The former has the exterior of the segments stained with pale violet instead of azure blue, as in the case of Grand Lilas. *Couronne des Bleues* is a pale form of the last named, the shape of the bells and build of the spike being the same: the bells are large, well formed, but not plentiful; and the foliage is so tall and rank as to almost entirely obscure the spike. *Byron* (W. Paul) is another pale flower, rather darker than the two just described, the bells not quite so massive in appearance, nor the segments so broad. *La Grande Ressemblance* (W. Paul) is another, perhaps best described as an improved *La Grande Vedette*, the bells finer, and the spike larger, and better set. *Marge* is another of the same type, but a fine and striking flower, with pale grayish azure-blue bells, large, stout, and well formed, making a handsome and commanding spike. *W. E. Gladstone* may be best described as a pale form of Charles Dickens, but

not so effective. *Marcel* is but the other self of Grand Lilas ; but, being also suffused with pale violet, it has a darker appearance. *Delicata* is a very pale form of the old double blue flower Madame Marmont, but with finer and better formed bells.

Autocrat (W. Paul), awarded a first-class certificate, is a promising addition to the single mauve class, and, when seen, appeared capable of being produced much finer: resembling to some extent Feruk Khan, it is yet of a livelier hue, having more of reddish violet in the prevailing color, while the segments have a perceptible stripe of black along them ; the bells are small, but well formed, and set closely on the spike. *Jescho* (Cutbush) has a reddish mauve tint, the segments margined with a pale tint, small as shown, but a nice, bright-looking flower, and shown fine last year at Amsterdam. *Charles Dickens*, a mauve-colored variety, similar to Prince of Wales, is of a pale reddish hue, the bells small, the spike close and compact.

Prince Alfred (Cutbush) is a single red variety of a deep rose color, something in the way of Von Schiller, but deeper and yet brighter in hue, of a pleasing shade of color, and a promising flower. *Eclipse* (W. Paul) is a lively single red variety, but, as shown, not first-rate. *Mirandoline* (W. Paul) is a single red kind, like Von Schiller, but darker, and having the same shape of bell. *Sadowa* (Cutbush) is in the way of Florence Nightingale, of a deeper hue of color, but the spike not so good. *Agnes Sorrel* and *Orange Boven* are two rose and nankeen colored varieties, produced from Duc de Malakoff: the former has the deepest color ; but both are very pretty and novel, and form good spikes.

Of white flowers, *Bijou Céleste* (Cutbush) is a small form of the huge-belled single white variety Snowball: the bells are smooth, well shaped, and of the purest white. *La Grandesse* is in the way of Mont Blanc, but with larger and better bells. *Michael Angelo* is an improvement on that fine but uncertain single white variety, Madame Van der Hoop, and produces a larger, fuller, and more reliable spike. *Van Hoboken*, double white, though not new, is rarely seen, because so unreliable : the individual bells, though good, are loosely hung on an irregular spike. *R. D.*

Iresine Lindeni. — Of the several species of the amaranthaceous order which furnish highly-colored leaves for flower-garden decoration, this plant promises to be one of the most useful. Its habit is dwarf and freely branched, producing an abundance of twiggy shoots, which are clothed with lance-shaped leaves of moderate size, and of a deep blood-red color, the midrib appearing as a broad purplish band. This coloring, M. Van Houtte observes, is varied as the foliage is moved by the wind, so that the plant presents different shades of violet, purple, and deep rose, a deep-red hue predominating. It is said to grow from about a foot and a half to two feet high ; and the leaves have this great advantage over those of *Iresine Herbstii*, irrespective of their better color, — that they present a clean, flat, even surface, instead of one which is so concave as to appear distorted.

Iresine Lindeni has been quite recently introduced from Ecuador by M. Linden, by whom it was exhibited for the first time at the great Ghent show in April last. It has subsequently passed into the hands of M. Van Houtte of Ghent, by whom it is now being distributed.

New Florists' Flowers. — Some of the old florists, who have ardently longed for the return of that time when their favorite flowers shall be once more in the ascendant, may take heart from the fact that cinerarias are again winning honors, and so suggesting that named varieties are being again sought after. At the meeting of the floral committee on the 6th of April, a first-class certificate was awarded to Cineraria Orb of Day, exhibited by Messrs. F. & A. Smith, Dulwich: it is a very fine variety, with the florets unusually stout and smooth, of a rich, bright rosy-crimson, white at the base, forming a narrow circle round the pale disc, and with a thin line of bright deep rose separating the white from the crimson: the coloring of this flower is superb, but it has a tendency to reflex. Messrs. Dobson & Sons, Isleworth, had another variety, called Princess Teck; white, with a dark disc, but inclined to coarseness. Other new varieties were shown, but not in a condition to call for special notice. In the way of new azaleas, Messrs. F. & A. Smith had Advancer, a taking flower of a clear rosy pink hue, but said by competent judges to resemble too closely Frost's Perfection, sent out a few years ago. Messrs. Veitch & Sons, Chelsea, exhibited a group of plants of Azalea James Veitch, a variety that was thought very highly of at the International Horticultural Exhibition at Ghent, last year. The flowers are of a remarkably bright deep-rose hue; but they were shown small and rough, as if they had been pushed on too rapidly into bloom. *Primula sinensis fimbriata alba magnifica*, a fine white form of the single Chinese Primrose, the flowers produced on red stalks, was shown by Mr. B. S. Williams, Holloway: this was not so pure or distinct in character as one exhibited by Mr. W. Paul a few weeks since. The type of flower shown by Mr. Williams has this season been observed on several occasions, and is not so novel as he would seem to suppose. There is also a tendency on the part of all white primulas with red stalks to come striped, or flaked.

A novel and handsome form of *Primula cortusoides amœna*, named *lilacina*, from Messrs. Veitch & Sons, received a first-class certificate from the floral committee on the 20th ult. The flowers are pale lilac, and expand much more fully than those of the paler varieties already introduced. Some plants of *P. amœna* itself, from the gardens of the Royal Horticultural Society at Chiswick, were much admired. They were grown in five-inch pots, and were loaded with masses of deep rose-colored flowers, affording another illustration of the advantage of a little "wholesome neglect;" for the plants which bloomed so remarkably well had been allowed to remain in the pots without a shift, and had become pot-bound. H. P. Rose, Prince Leopold, a dark purple-crimson sort, was exhibited by Mr. W. Paul as a climbing variety: some doubt was expressed as to whether it could be considered to have a truly climbing habit; but, at any rate, it will form a valuable addition to pillar roses. A delicate, pale flesh-pink H. P. Rose, named Thyra Hammerich, which is said to be one of the best of the new ones of last year, and which, though not in good condition, was full of promise, together with a beautifully cupped and globular pale pink unnamed seedling rose, were also brought by Mr. W. Paul. Mr. Butcher of Cambridge showed a fine gray-edged, maroon-ground auricula, named Mrs. Butcher, which was awarded a second-class certificate: this will probably develop into a first-class

flower. Mr. Turner had a fine lot of new Alpine Auriculas, especially flowers having maroon-crimson and plum-colored grounds: the most striking were named Marvel, Charley, Arthur, Stella, and Godfrey; but some account of these will be given hereafter. A fancy pansy, Princess of Wales, from Mr. H. Hooper of Bath, is a bold showy flower, with an almost white ground, and large, regular dark blotches. Azalea Thackeray, from Mr. Z. Stevens, Trentham, a cross between Etoile de Gand and Imperialis, is a deep orange-red flower, having many good properties, but with the edges too much crumpled to give it the desired even outline; being free-blooming, of good habit, and of a showy hue of color, it promises to make an effective exhibition variety, notwithstanding the want of perfect smoothness in the flowers. A very fine group of seedling amaryllis was shown by Mr. Baxter, gardener to C. Keiser, Esq., Broxbourne. Three fine varieties of the pale-colored or vittata series, named Mdlle. Titjiens, Olga, and Alexandra, received each a first-class certificate. They are all bold, finely-shaped flowers, with white bar or margin, and light rosy or carmine-red tints on the segments. One, called Duke of Edinburgh, a rich, deep crimson, but rather narrower in the segments, was awarded a second-class certificate. — *R. D., in Florist and Pomologist.*

Massachusetts Horticultural Society. — July 16. The opening of the hall took place to-day, and, the exhibition being continued through the 17th, both halls were occupied with the best display ever made at this season of the year. The most striking feature of the show was the splendid geraniums from Mr. Harding, who took both prizes for zonale geraniums, and also for variegated geraniums. The display of plants on the centre-table in the upper hall was very fine, mostly beautiful foliaged plants, contributed by Mr. H. H. Hunnewell, who took the first prize for greenhouse plants, Hovey & Co., who received the second, and W. C. Harding the third prize. The prizes for specimen plants were awarded, first to Mrs. T. W. Ward, for Retinospora; second to H. H. Hunnewell, for *Abutilon Thompsonii;* third to Hovey & Co., for *Pandanus elegantissimus.*

Among the most beautiful plants, we noticed in Mr. Hunnewell's collection, *Coleus Saundersii*, *Berkleyii* (very dark and rich), *Marshallii*, *Begonia picturata*, *Ficus Roxburghii*, *Levistonia altissima*, *Vresia Glazionoma*, *Croton longifolium*, an *Alocasia macrorhiza*, *Alsophila excelsa*, and other tree-ferns, besides caladiums, dracænas, ferns, &c.

From Hovey & Co., *Pandanus elegantissimus*, *Dracæna umbracylifera*, *Yucca aloefolia variegata*, *Coleus Berkleyii*, *Hibiscus Copeii*, *Areca Verschaffeltii*, *Maranta pulchella*, *Yucca quadricolor*, *Gladiolus Lyonesii*, *Latania Borbonica*, *Agave filifera*, *Abutilon Thompsonii*, *Anthurium regale.* Also cut flowers of *Viola cornuta.*

From W. C. Harding, *Gymnostachium Verschaffeltii*, *Croton longifolium*, *Maranta pardina*, *M. zebrina*, *Rhyncospermum variegata*, *Anthurium regale*, *Yucca aloefolia var.*, *Pavetta Borbonica*, *Lycopodium Wildenovii*, caladiums, ferns, dracænas, &c.

From Mrs. T. W. Ward, beautifully-grown gloxinias, also fine rhododendrons and azaleas, and a remarkably fine specimen of fuchsia.

From Miss E. Clark, Woburn, a hundred and twenty-five species and varieties of native plants.

From the botany class in Dean Academy, another interesting exhibition of native plants. E. H. Hitchings of Boston showed a variety of wild-flowers.

From M. P. Wilder, thirteen seedling coleuses, which received a silver medal.

From W. C. Harding, cut-flowers of *Allamanda Schottii*, and new varieties of gloxinias.

From John Barker, Cambridge, *Dionæa muscipula*, or Venus's Fly-Trap.

E. S. Rand, jun., beautiful azaleas and rhododendrons, including a plant of *R. purpureum grandiflorum* in full bloom ; also cypripediums.

From W. Halliday, Boston, two beautiful Wardian cases of plants, which received the first and second premiums.

A great variety of cut flowers, bouquets, and baskets, were exhibited by ladies and gentlemen for whose names we have not room.

George Hill of Arlington exhibited Jenny Linds, which received the first prize for early strawberries. The same variety by W. H. Locke took the second prize. J. W. Foster received the first, and J. B. Moore the second prize for Wilson's Albany.

M. H. Simpson, Saxonville, Black Hamburg and White Frontignan Grape, first prize. W. C. Strong showed fine specimens of Hale's Early Peach, also bearing trees in pots. J. B. Moore, Hunt Russet Apples, growth of 1868. Miss S. C. Carter, Wilmington, cranberries, growth of 1868. Joseph Tailby, Wellington, King of the Earlies Potatoes. Caleb Bates, Kingston, sweet potatoes, growth of 1868, and Carter's First Crop Peas, out doors. W. C. Strong, Gen. Grant Tomato. W. E. Baker, Wellesley, tomatoes.

June 19.—Hovey & Co. exhibited a great variety of pæonies, also miscellaneous plants, including the new and beautiful *Pyrethrum roseum*. Among the best pæonies were *Grandiflora nova*, Victor Pacquet, Louis Parmentier, *Festina maxima*, Sonaise Delaché, Camilla Calot, *violacea pleno*, Faust, *Ne Plus Ultra*, Comtesse de Morny, Washington, Bossuet, Gen. Bertrand, Prince Troubetsky.

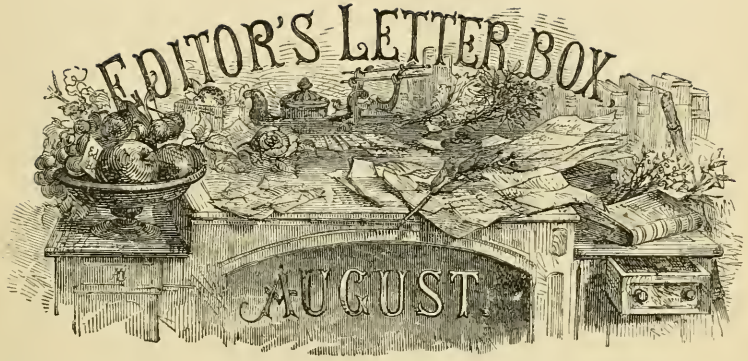
E. S. Rand, jun., Rhododendron Hannibal, one of the best and hardiest late varieties. James M'Tear, bouquets. George Leland, Watertown, Carter's First Crop Pea. S. C. Cobb presented Jackson White Potatoes grown at Pensacola, Fla., by B. Chandler, in sand with the aid of seaweed alone. Also Sisal Hemp, from plants imported by Dr. Perrine in 1837, grown at Boca Chica by Gov. Henry Geiger. This hemp is the product of several species of agaves and aloes, which grow both wild and cultivated in Yucatan. It now grows on many of the islands of Florida, of a quality superior to that of the parent stock, and requires no cultivation. The fibre resembles the so-called Manila Hemp, but is superior to it.

Book-Farming. — We do not hear as many sneers at book-farmers as we used to a few years ago ; yet the idea is still entertained by certain cultivators who delight to call themselves "practical men," that a man who reads a horticultural or agricultural book is a visionary theorizer, and can be nothing more. We never could quite understand the reasoning by which the "practical men" prove that he who keeps himself informed of all the improvements in horticul-

ture, and applies them in his own cultivation, and tests their value, must needs be a worse gardener than his neighbors. And our "practical" friends are not above visiting their brother cultivators (when the distance to be travelled is not too great) and examining and discussing their methods of culture, and their new varieties of fruits and flowers. Now, will they tell us why the knowledge thus gained would not be just as good if they had read it in a book where it had been printed for their benefit, and that of a thousand or ten thousand others? Certainly, while every science, every profession and trade, physicians, lawyers, architects, builders, cooks, in fact, every occupation that can be named, have their treatises and manuals, giving not only rules for action, but the principles which underlie them, it would be very strange if horticulture should form an exception to every other art, and horticulturists could get along just as well without as with the aid to be derived from the recorded experience of their fellow-laborers. What would be the fate of the physician, for instance, who should rely on the experience gained in his own practice, and think it beneath him to look into a medical book? Of course, he would be nowhere in the race; and that is just where the horticulturists who never read a book will find themselves whenever they wake up, and get their sleepy eyes open, — with all their competitors away out of sight ahead of them. Whoever will note the men who seem to take a kind of savage pleasure in decrying "book-farming," will be pretty sure to find in them plenty of conceit and narrow-mindedness, as far as possible removed from the generous thought and breadth of view which comes of a full acquaintance with the history of all the discoveries in horticulture, and a knowledge of the improvements daily made by the hundreds of active minds now applied to it, under the combined stimulus of a love of the pursuit, and the hope of the pecuniary reward which is sure to follow every valuable improvement.

Old Pear-Trees. — Mr. Jefferson Raitt of Eliot, Me., has in his garden some pear-trees which bore fruit in 1730, and are now in healthy growth.

Directions for planting Strawberry-Seed. — Make a bed of light, rich soil, rake fine and level, and plant the seed in drills one foot apart. Cover the seed with about one-eighth of an inch of soil, and water freely. Seed planted in the summer or fall will come up the next spring. Protect the plants the first winter with a covering of leaves. Thin and transplant the second year, so that the plants shall stand one foot apart each way. Some will bear fruit the second summer.



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

C. S. — Great care is needed in the application of salt to ground. Asparagus, being a marine plant, will bear without injury a sufficient quantity to kill ordinary weeds. If applied early in the season around trees, a larger quantity may be used than when they are in a growing state; but under no circumstances should more than eight bushels per acre be applied. It could not be applied to general crops of vegetables, while growing, without too much risk of injury.

W. K. T., Jerusalem, O. — The construction of a cold pit for wintering plants is a very simple matter. The first point, and a very important one, is to choose a spot either naturally dry, or else well drained. Then excavate about three feet and a half in depth, and the width of a hot-bed, so as to use common hot-bed sashes. The length may be whatever is needed to accommodate the plants to be wintered. If the soil is coherent, it will answer without any lining; but it would be much better to line with boards, tarred or burnettized to preserve them, or with brick or stone laid in mortar, if you do not mind expense. The frame above ground should be plank, seven inches high in front, and fifteen on the back, and banked up with earth; or, if the ground slopes, it will save the trouble of banking. If the pit is of brick or stone, the walls may be brought to the proper height, and the sash-frames fitted directly to them. Cover in winter with mats and boards, so as to exclude frost, and give air whenever the weather is mild enough, especially if you have soft, succulent plants in your pit: for hard-wooded plants, it is not so important. It is better to plunge the pots in tan or sawdust than merely to set them on the bottom of the pit.

Management of Early Potatoes. — A correspondent wishes information as to the management of his crop of Early Rose and Early Goodrich Potatoes. He says he raises nothing for market, and his horticultural ambition is satisfied when his success meets the wants of his family table; but he is in doubt as to the proper course to be followed in harvesting. Should the tubers be taken from the ground immediately on the decay of the plants? or will the quality be better retained by allowing them to remain, drawing a few daily, or from time to time, as they may be needed, till cold weather? A word of advice would not only oblige him, but, he thinks, would be acceptable to many of our readers.

Our impression is decidedly in favor of harvesting early potatoes as soon as the tops decay. It is much less trouble than to dig a few at a time, and the ground can be used for other purposes; and if they keep no better, we think they will certainly keep quite as well. We do not recollect that the question has been raised before, and would like to hear the opinion of cultivators in regard to it, as it is of much interest, now that so many persons are raising early potatoes in their gardens.

P., Boston. — Carnations are layered when in bloom. Lay around the plant two inches of rich compost, stirring slightly so as to mix with the soil beneath. Remove the lower leaves of the shoot selected, and about half an inch of the extremities of the upper ones. With a sharp knife cut about half through the shoot from the underside, and up a short distance, in order to facilitate the emission of roots. Fasten the cut part of the shoot about two inches under the surface with a small hooked pin, bending carefully so as not to break it, and with the extremity above ground. Press the earth firmly around with the fingers. Keep the soil moderately moist, and in from a month to six weeks the layers may be separated and transplanted, or allowed to remain where they are, after being carefully cut from the parent plant.

MR. EDITOR, — I see that writers on strawberry-culture recommend planting in either fall or spring. Will you give me your opinion as to which of these seasons is best? *F.*

We do not advise planting in autumn, although it is no doubt true that plants set in August or September will produce a partial crop the next season, such of them as live and become firmly rooted; but success in transplanting is much more uncertain at that season than in spring; and, among the large growers, nobody thinks of setting plants at any other season than spring. In a small garden, where the plants are at hand, so as not to be dried by exposure, and a cloudy or rainy day can be selected, and the plants watered afterwards, it may be advisable to plant in autumn so as to secure a partial crop the next season; but we would not recommend it under other circumstances.

F. R. thinks of planting an orchard of quince-trees, and would like our views as to the probable profit. — We say by all means plant them. Quinces, which, as long ago as we can remember, brought three or four dollars a bushel, afterwards fell to one dollar per bushel, which discouraged planting: so that they are now one of the scarcest fruits in the market, selling quickly at from five to eight dollars a bushel; and we do not think ground could be used much more profitably than for growing quinces at that price. As for the fear, that, by the time your trees come into fruit, everybody else will have them in market, and bring the price down again, it is true that they may, and so they may any other fruit; and, if we took counsel of that fear, we should not plant many trees of any kind. But we advise you to go on and plant the best kinds, and take the best care of them, so that, when they come into market, you will get the best price. Give the trees plenty of room. If you plant them ten feet apart, in good soil, and manure them as they should be, when full grown you will wish you had given them fifteen feet. Above all, be sure and look sharp for the borers, and destroy them before they get far into the wood, for they go deeper in the quince than in any other tree, and are, of course, much more difficult to kill.

E. A. R., Bethlehem, Penn. — No. 1 is *Lamium rugosum*, pink variety; No. 2 is *Campanula persicæfolia;* No. 4, the lily, is one of the varieties of *L. umbellatum*. *L. Philadelphicum* never yet produced eight to ten flowers on a plant. *Cypripedium spectabile* will thrive under the same treatment as *C. pubescens* and *parviflorum*. If you have no friends in any place where it is native, you can procure plants of L. Menand, Albany, N.Y., who has them for sale. Transplant either in October or April: the spring is perhaps the best season.

W. T. — Your strawberry is no doubt the Austin, or Shaker Seedling.

CORRESPONDENTS who send specimens of fruit for names will oblige us by accompanying them with all the information they possess as to their origin, history, source whence received, habit of growth, and any other facts known to them; as such hints often afford a clew to their names.

Novice, Elton. — You have given the fern, which is a very pretty Maiden-Hair (*Adiantum*), too much water, and all the roots are rotten. Sow fern-spores on the surface of fine loam in a shallow pan, keep moist, and cover with a bell-glass, or merely lay a sheet of glass over the top. In a week, you will see the ground green with the young plants.

A. K. Bull, Hartford. — You can raise dahlias from seed; but the chances are greatly against your getting any flowers as good as will come from roots, which you can buy at one or two dollars a dozen.

The tiger-flower is a native of Mexico, and is killed by frost.

S. Latimer, Ithaca. — You have drawn a peculiar flower, and, probably, from imagination, not, as you say, from Nature. We should be pleased to receive dried specimens, but hardly think you can produce them.

S. S. — The best season for root-pruning trees, we have found to be early in June. If performed when the trees are dormant, it will not check their growth so much.

Elliott Bros. & Burgess, Pittsburg, Penn. — The calceolaria flowers came in passable order. Both are good flowers; and, if the habit of the plant is good, the varieties are worth propagating.

Of the two, as nearly as we can judge from faded specimens, the yellow is the better: it is seldom we see such a rich, clear color.

Mrs. O. H. T., Rochester, N.H. — The plant sent is *Achania Malvaviscus*. It is a charming parlor-plant, and never out of bloom, requiring little care, and always doing well: the berries are no less ornamental than the flower.

Idem. — There are two plants commonly known as *Hibiscus grandiflorus;* of these the true is an herbaceous perennial with flame colored flowers, and attains the height of three feet; a native of Georgia; this requires to be grown in loam and peat, with plenty of water, and blooms in the summer. It is not hardy, and should rest in winter.

The other is *H. heterophyllus*, a greenhouse shrub with white and red flowers. It should be grown in loam and peat, and have a warm exposure, and be kept in the greenhouse in winter.

Mrs. N. L. D., Rutland, Vt. — The tall white flower is *Spiræa aruncus*, or goat's-beard; the yellow is *Lysimachia verticillata*, one of the hardy herbaceous loosestrifes. The shrub is a hawthorn, probably *Cratægus Crus-galli.*

A Subscriber, Wood's Hole. — The three yellow flowers are, No. 1 (the composite plant), *Hieracium venosum*, commonly called rattlesnake weed; No. 2, *Œnothera pumila*, dwarf primrose; No. 3, *Xyris Caroliniana*, yellow-eyed grass.

Is the Downing Mulberry-tree hardy? and has it generally succeeded in New England and the Northern States? A few weeks since, I saw a fine thrifty tree in the grounds of Hon. Albert Fearing, at Hingham, Mass., which, I was informed, had never been injured by the winter, and had made an uninterrupted growth from the time of transplanting. It was filled with fruit. If this instance is not exceptional, it seems to me that the tree deserves more attention than it is just now receiving. Will the editor give the readers of the Journal his opinion as to its real merits? *B.*

We have had no experience with the Downing Mulberry, and do not think it has been generally planted in New England. It is certainly most desirable that its hardiness should be tested; and we trust that any of our readers who have information in regard to it will communicate it.

To the Editor of "Tilton's Horticultural Journal:"—

I HAVE made several attempts to grow New-Zealand Spinach, without success. First I planted the seed as it came from the seed-store; it did not germinate. Next I soaked the seed in warm water before planting; nothing grew from it. This season, I procured seed of Hovey & Co., Boston, and soaked it twenty-four hours; the water being very warm when poured upon the seed. This seed was planted just a month ago; but there is no sign of plants growing from it. What shall I do to succeed in an attempt to grow New-Zealand Spinach? *Amateur.*

WORCESTER, June 21, 1869.

The seeds of New-Zealand Spinach, even when fresh, vegetate slowly; and old seeds are almost worthless. With seeds in the best condition possible, and under the best management, quite a percentage will often fail. We have generally obtained all the plants needed by sowing new seeds under glass, in April, on a moderately-heated bed, and giving plenty of water. About the middle or 20th of May, transplant to the open ground, two feet and a half apart.

Our correspondent is also referred to an article on this plant in our "Notes and Gleanings."

Editor of Tilton's "Journal of Horticulture:"—

I have forty dwarf peach-trees in eleven-inch pots. Will you please to advise me through the Journal how to winter them so that I may obtain a full crop? Do I need to put them in larger pots next season? If so, how large? and at what time in the season should they be reset? *R. V. D., Thompsonville, Conn.*

If intended to fruit in the open ground, the trees may be wintered in a cold, dry cellar, or any place which will afford slight protection from extreme cold. If the pots are plunged in a cold frame, slight frost will be a benefit rather than an injury to the tops. For winter-forcing, the trees may be brought in at any desired time after a brief rest, giving them a very gradual start at the first. The tree will not need repotting the first season, provided the soil was of good quality, and well packed in. A size larger (twelve-inch diameter inside) would, however, have been a preferable pot. The end of the season is the best time for repotting.

We insert the following, in the hope that some of our readers may be able to give the desired information.

Where are the small, white onion-sets seen in our seed-houses late in winter and early in spring, and which are so generally used by our marketmen for planting for early salad, &c., principally grown? Can they be raised in New England? If so, what is the variety? when and how should the seeds be sown? how should the crop be managed? when should it be harvested? and how are the bulbs preserved during winter? *B. B.*

Querist, Hudson, N.Y. — *Lilium longiflorum* has three or four flowers on a stalk, if the bulb is strong. *Lilium superbum* has from one to forty.

A. G. — If your agapanthus is too crowded for the pot, or if you wish to propagate it, it should be divided: otherwise we would let it remain as it is.

H., Boston. — The pretty little caterpillar which you send, and which has been so unusually abundant and destructive to the pear, linden, horse-chestnut, and white-ash trees, is an old acquantance, the larva of a moth, *Orgyia leucostigma.* When they have done eating, they spin their cocoons on the leaves, or on the branches or trunks of trees, or on fences. In about eleven days after changing to the chrysalis, the perfect insects come forth, and the female lays her eggs on the top of the old cocoons, the greater part not being hatched until the following summer. These patches of from one to two hundred eggs, covered with a leaf, and united to it and to each other by a silken fibre, may be found in winter and early spring, and destroyed, which is the best remedy against the ravages of the insects. In summer, the caterpillars may be shaken from the tree, and crushed.

B. S. — We have found the best way to clean strawberry-seed to be to mash the strawberries in water, and pass as much as possible through a colander or coarse sieve. The part of the pulp which passes through will be very easily separated from the seed by repeated washings in plenty of water, and pouring off the upper part, the seed settling at the bottom. The part which fails to pass through will be more difficult to free from pulp, and must be thoroughly rubbed together with sharp sand, which will have the effect of cutting the pulp from the seed, when they can be separated by washing, as before. See also Vol. IV., p. 320, of this Journal.

CULTIVATION OF THE ANTIRRHINUM, OR SNAP-DRAGON.

By Joseph Breck, Ex-President of the Massachusetts Horticultural Society.

Antirrhinum major has not only a beautiful flower, but one which is also very curious in its structure. The corolla is monopetalous, or of one piece, and irregular in its outlines: it is divided into two lips which terminate the funnel part of the flower. The upper lip is arched over and closes the orifice: when gently pressed with the thumb and finger below the lip, the lower one is thrown open, as with a spring, and discloses four stamens in two pairs of unequal length; one of the pairs being longer than the other. Gerarde, in his old "Herbal" says, "The flowers grow at the top of the stalks, of a purple color, fashioned like a frog's mouth, or rather a dragon's mouth, from whence the women have taken the name of snap-dragon." The scientific name *antirrhinum* is derived from Greek words which mean "similar to a nose." The body of the corolla, in some of the most beautiful varieties, is a pure white, while the lips are carmine, crimson, purple, rose, or yellow; some are beautifully striped like a carnation; while the whole flower of others is pure white, yellow, purple, or crimson.

The lower lip is generally tipped with yellow. When the corolla is thrown open by the gentle pressure of the thumb and finger, a white throat is revealed, and as the stamens have a fancied resemblance to teeth, it does not require a great stretch of the imagination to liken it to the mouth of some animal. If the flower possessed a pleasant odor, it would certainly add very much to the value of the plant; but, as it is, it may be classed with the most desirable of our border flowers. When planted in masses, it presents a very gay appearance when in flower, where all the beautiful varieties are displayed. It is considered a perennial; but with me it is a very imperfect one. In a light loamy soil, it will continue a number of years; but in a very moist or wet soil, it generally perishes the first winter. But, as it blooms freely the first season from the seed, this is not of much consequence, although plants that have stood the winter flower earlier than seedlings; but the flowers are no better.

Gerarde says, "The seeds are black, contained in round husks" (he means capsules) "fashioned like a calf's snout; or, in my opinion, it is more like unto the bones of a sheep's head that hath been long in the water, or the flesh consumed clean away." If the seed is sown in the greenhouse or hot-bed in March, and transplanted into the open ground the last of May, plants will begin to flower by the middle of July, and continue in bloom until October; or, if sown in the ground the first of May, the flowers will be five or six weeks later, and the plants will bear the winter more surely. The varieties are easily propagated from cuttings on a moderate bottom-heat; but the plants from seed are generally so true to the parent, that, unless the variety is remarkably striking, it hardly pays to increase the plants in this way.

The flowers are disposed in spikes, which, on the taller varieties, rise eighteen inches to two feet from the ground, on which appear five, six, or more perfect blooms at the same time, terminated with a stock of buds in various stages of growth, promising a long succession of bloom.

Antirrhinum humilis. — This is a class of dwarfs, varieties of *A. major*, sporting in the same variety of colors, growing from six to ten inches high, desirable to plant in front of a mass of the tall varieties.

If the plants are disposed in masses one foot apart, they will completely

cover the ground. They throw out a succession of branches from the bottom of the plant; and if the spikes of flowers are gathered when in perfec-

Crimson and White Antirrhinum.

tion, before the seed-vessels are formed, the later spikes will be greatly benefited thereby.

NOTES ON RASPBERRIES.

The mild weather of the last winter was peculiarly favorable to the raspberry and blackberry, neither of which have received injury, though wholly unprotected; and the abundant rains of summer have been favorable to the swelling of the fruit, affording an excellent opportunity to judge of the merits of the different varieties.

The *Brinckle's Orange*, as a table variety, maintains its high reputation, but is too soft for market. Its color is deeper than any other of the white varieties, being very rich orange; fruit large; form conical; flavor unsurpassed, sweet, rich, and delicious; canes strong, of a white color. Raised in 1844 from Dyack's Seedling, an English variety, of a deep crimson color. It was said by Dr. Brinckle to reproduce itself generally from seed.

Vice-President French. — Canes stocky, robust, branching, but not tall, quite smooth; does not sucker so freely as most kinds; foliage very dark green; berry of good size, roundish, grains large, color crimson; of fine quality. Raised by Dr. Brinckle, from the Fastolff, crossed with Yellow Antwerp; but the true kind is seldom to be seen.

Colonel Wilder. — Foliage much crumpled; spines white; fruit large, roundish, very delicate, yellowish-white or cream-color, semi-transparent; grains, or pips, prominent. One of the finest flavored raspberries, and very productive; flesh soft, and only desirable for amateurs. Raised by Dr. Brinckle from a seed of the Fastolff, and first fruited in 1847. Many seedlings raised from this variety by its originator bore fruit in every respect like that of their parent; others were of a yellow color, like the Yellow Antwerp; and many crimson.

Hornet. — Canes strong and smooth; foliage vigorous; form conical; pips full; color crimson; unquestionably the largest of all raspberries. Though not of the highest flavor, its large size, productiveness, and tolerably firm flesh, render it valuable, especially for market. It parts freely from the receptacle. Of French origin, having been raised by M. Souchet of Bagnolet, near Paris.

Souchetii, or *White Transparent.* — Plant vigorous; canes smooth, large; form long-conical, regular, grains of medium size; color yellow, resembling

Yellow Antwerp; juicy, sweet, and good; very productive. Origin same as Hornet.

Mrs. Wood. — Of Black-Cap habit; canes very strong, sprawling, with coarse prickles; berry medium size, round, resembling the Black Cap in flavor; very productive. Ripens later than most kinds; color, when fully ripe, very dark, dull, purplish red; of fair quality.

Semper Fidelis. — Canes vigorous, short jointed, branching, with numerous short and stiff purple prickles; foliage large and vigorous; fruit large, conical, regular, dark crimson; pips medium size; flesh firm; flavor acid, and of indifferent quality; very handsome, a great bearer, and ripens late. Of English origin.

Clarke. — A robust grower; fruit of good size, irregular-conical; color dark crimson, tolerably rich, and of good flavor; grains large, apt to separate in plucking; fruit irregular in size, the first good, but gradually lessening to the close of the season. Though claimed as perfectly hardy, it does better when covered.

Philadelphia. — Canes vigorous; fruit hardly of medium size, round, dark purplish red. The only point in which it excels is its enormous productiveness.

Knevett's Giant. — Canes vigorous, tinged with purple, and covered with thin bloom; prickles few and of pale color; leaf somewhat rough, of dull, dark green; fruit large, roundish-conical; grains large, sweet, and rich; does not part quite so freely from the core as some kinds, but still may be easily gathered; flesh tolerably firm. One of the best for family or market. Imported from England by Mr. Wilder, having been received as a present from Messrs. Chandler & Co. of Vauxhall, who, when applied to for more plants, stated that those sent Mr. Wilder were the only ones they had ever had, and they were under the impression that these were brought in by some person in that vicinity.

Franconia. — Canes strong, with a moderate number of purplish prickles; the new wood, the bearing laterals, and the petioles, also tinged with brownish purple; fruit large, conical; grains large; flesh firm, of a brisk, pleasant acid, parting very freely from the receptacle. For market, besides carrying better than any other, it possesses the great advantage of being better twenty-four hours after it is gathered than when fresh from the bushes, the

texture of the flesh and the flavor both becoming mellowed ; while the sprightly acid of the fresh berries renders it superior to any other for preserving.

This variety was received from Messrs. Vilmorin of Paris, many years since, by the late Samuel G. Perkins ; and it is remarkable that this, as well as the Knevett's Giant, is either unknown in European catalogues, or only as returned from this country.

Doolittle's Black Cap. — Of fine flavor when ripe, perfectly hardy, and enormously productive, but not a favorite in Boston market.

The new varieties raised in Canada by Mr. Arnold are not sufficiently tested here to form a decided opinion of their merits ; but, so far as can be judged, the Yellow is of the color of Brinckle's Orange ; sweet and rich ; canes slender, branching, covered with bloom, like the Black Cap. The White is of the color of Yellow Antwerp, very round in form, sweet, and high flavored ; canes without branches, very prickly. The Red is rounded, of good quality, canes slightly branching, and having many red prickles.

For the opportunity of examining many of these varieties, we are indebted to a visit to Mr. Wilder's collection, where we saw also the Naomi in fruit. We have always thought the differences described as existing between this and the Franconia not sufficient to constitute a distinct variety ; and this view was strengthened by the inspection of the bearing plants. Mr. Wilder, however, was less decided in the expression of his opinion, but thought it probably a reproduction from seed of the Franconia with but slight modification.

Mr. Wilder showed us two new seedlings, one having a tall robust cane, entirely smooth, with ample, healthy foliage ; fruit large, conical, sprightly, high flavor ; firm flesh ; very productive. The other was of very regular, rounded-conical form ; firm flesh ; good flavor, and bright rich red color, presenting a very attractive appearance.

There does not appear to be any thing among the newer varieties to supersede the old favorites. If we were going to plant for our own use, we should go no further than Knevett's Giant and Brinckle's Orange ; but, if more variety was desired, we would add Souchetii, Hornet, and Franconia, or, if we had room for but one, it should be Knevett's Giant. We may here mention that Mr. Wilder informed us, that he had found raspberry

preserves much improved by adding one-third part of currants, which gives them a spirit not otherwise found.

For market, we would plant Franconia, Knevett's, and Hornet; or, if confined to a single variety, the Franconia would be the one. This is with reference to Boston market, where good specimens of the large, fine kinds sell more readily at fifty cents per quart than the Black Caps at half that price. The kinds recommended must, however, be covered to secure a crop; but we believe they will afford more profit after allowing for the expense of covering than the smaller sorts: indeed, the gain in picking, as compared with the small kinds, will go far towards paying the cost of covering. The Black-Cap varieties, although their flavor is relished by many, are, on the whole, of little value, except to those who cannot or will not take the trouble to protect in winter. The white kinds do not sell as well in the market as the red.

KEEPING PEARS.

About a year since, I called attention, through the Journal, to the importance of more general knowledge as to the best methods of keeping pears. I think the editor then promised an early article on the subject, which has not been forthcoming. This question grows in importance yearly. At the present rate of pear-planting, this noblest of fruits ought soon to become a staple in all our markets. Probably three-fourths of all pears planted will ripen in early autumn, and will keep but a short time in the common way of handling. Now, occasional facts published indicate that many of our best fall varieties can be kept in perfect condition into midwinter, or beyond, in Nyce's Fruit-Houses; perhaps in other ways. Do let us gather the experience of all who have been successful with any practicable methods. The question is one of magnitude to a large number of growers, and to the great community of consumers who prize the choicest luxury of the table. Let us have knowledge. *P. E.*

South Pass, Ill., April, 1869.

TOO MUCH FRUIT, AGAIN.

By J. M. Merrick, Jun., Walpole, Mass.

The fear is sometimes expressed that the present mania (as it is termed) for fruit-growing will lead to the business being overdone, and that we shall have a plethora of fruit. We believe that there will be little danger for years to come; and we can generally pose any one who thinks we shall have too much fruit, by asking him a very simple question; viz., How many families are there, whose habits and circumstances you know, that enjoy an abundant supply of fruit through the year? Understand what we mean by an abundant supply. We mean so much that every member of the family has a fair allowance of strawberries, then of cherries, currants, and raspberries, followed by melons, peaches (when they *can* be had), pears, and grapes, with apples of various kinds, from September till June. His answer at first is ready. Not one family in five hundred; for, at the present prices, a man must be a millionnaire to indulge in fruit at such a rate as you name.

Well, then, we will modify our question. How many families do you know, who live in the country, and have, with land and means enough, an abundant supply of fruit?

If honest, we think that our witness will say, in nine cases out of ten, not one family in fifty. Then we argue that the danger of raising too much fruit is not half so alarming as is the disgrace of not raising fruit enough.

Let each of our readers ask himself how many families he can count — always supposing them to own land enough, and to have means to cultivate it — who know what it is to have on the table, winter and summer, an abundant supply of choice fruit. How many have a fraction of what they could eat and enjoy?

He will find the number small indeed, unless he is more fortunate in the circle of his acquaintances than we are; and the moral that should impress itself on his mind is, Keep on planting, and wait for proof when you hear stories about too much fruit.

We have sometimes heard the remark made by people looking over a nursery catalogue, where vines and pear-trees are advertised by the ten

thousand, "I should think the nursery-men would get the country filled up at last, and so put an end to their trade." A moment's reflection would teach these persons that they forget two things: the size and population of this country, and the immense number of trees and fruit-bearing plants of all sorts that perish annually from neglect.

Riding one day with a friend by an orchard of dwarf pear-trees planted in a close, thick greensward, our friend remarked, "What a blessing to tree-growers these people are, who set out pear-orchards in grass!" Of course, they are the best friends of the nursery-men, for their trees die in a year or two, and then, undiscouraged, they buy some more; not from the same dealer, however; his trees were not good: and so keep the trade lively.

Sometimes, after three or four sets of trees have died, they get tired of the experiment, and pronounce pear-growing a humbug. They have tried it, have bought trees of half a dozen different nursery-men, and have always failed.

This is no fancy sketch. We have in mind at this moment a very large orchard of pear and apple trees, recently set in a thick, dense sod, and the owner doubtless is looking forward to an abundant double crop, fruit and grass, each year, from the same soil.

He will be disappointed; and so will everybody who thinks that rich, plump, juicy pears can be obtained by digging a hole in any soil that comes handy, jamming in a tree just taken from a rich nursery, and hastily crowding back the earth. We have *seen* this process again and again.

YELLOW CANADA RASPBERRY.

Our illustration of Mr. Arnold's yellow raspberry (No. 1), is from specimens sent us by him; and we are also indebted to him for the following description: —

"This raspberry is a grandchild of the old native White Cap or Bramble, fertilized with pollen of White Four Seasons and Brinckle's Orange. The canes are very strong growers, perfectly hardy on a cold, exposed knoll

YELLOW CANADA RASPBERRY.

without any protection, either of snow or any thing else. It does not root

from the ends of the canes like its grandparent. The fruit is of large size, of rich, delicate flavor, moderately firm, of a light-yellow color. The earliest raspberry that I know of; ripening as early as Trollope's Victoria Strawberry, and before Wilson's is gone; therefore filling up the blank between strawberries and raspberries. It is a good bearer, and has never failed to ripen a moderate crop in the fall."

PARLOR-PLANTS.—No. V.

By Edward S. Rand, Jun., Boston, Mass.

Is it heretical to say that the rose, the "queen of flowers," is not suitable for a window-plant? And yet there are very few roses which do even passably well with parlor-culture. If we except the old *Sanguinea* (now seldom seen), and the common pink Monthly, our parlor rose-culture will generally prove a failure. We do not say that other species and varieties cannot be grown as window-plants, for we have known them to succeed; but we do assert, that, with the care usually given to parlor-plants, roses do not thrive. There are several reasons for this: first, the air of most parlors is too dry for the plants to flourish or the large double buds to expand; again, the soil usually becomes sour and sodden, and affects the health of the plants; and, again, the green aphis infests the plants, and is continually troublesome. Now, all these difficulties can be overcome by care and attention; but both must be unremitting, or failure will be the result. In our list of parlor-plants, we do not intend to include those which can possibly be grown, but only those which will grow, thrive, and bloom with ordinary care and with such attention as can easily be given. Roses are not of this latter class: they, even in a greenhouse, are not especially adapted for pot-plants. Their proper place is planted out in the border of a rose-pit, where they thrive luxuriantly, and, with but little care, give an abundance of bloom.

A charming window-plant, and one which makes a very gay appearance during March and April, is *Tritonia* or *Ixia crocata*. The small bulbs should be procured in the autumn, and planted rather thickly in eight-inch pots. The soil should be rich sandy loam, with good drainage. After

potting, give a good watering, and set the pots in a warm, shady place, or even in the cellar, until the shoots appear above ground; then remove to a sunny window, and give water freely. About the first of March, if the bulbs have been planted in November, the plants will show bloom, and will continue to expand their orange-red flowers for about six weeks. After blooming, the plants should be gradually dried off by withholding water as the leaves wither; and, when the foliage turns yellow, they may become wholly dry. The pots should then be placed in a dry place until the next autumn, when the bulbs should be shaken out and replanted. This plant is very common, and may be procured of any florist: dry bulbs can be sent by mail at any time between May and November. As it increases rapidly, a dozen roots will soon give a large stock. By a little interval in the time of planting, a succession of bloom may be had from February to May. Many other species of *Ixia* and *Tritonia*, as well as of their near allies the *Sparaxis* and *Babiana*, do well with window-culture; but they are not very common, and are generally expensive.

We all know the pretty lady's-slipper of our woods; but very few know that there is an Indian species, which, for ease of culture and durability of bloom, will take first rank as a parlor-plant.

Perhaps we are somewhat rash in venturing to add a word of commendation in behalf of any member of a family (*Cypripediæ*) which has been so fully described in the pages of this magazine as have the lady's-slippers, by our friend Mr. Warren; but we would call especial attention to this plant, *Cypripedium insigne*, as showy and of easy culture.

The foliage is long and coriaceous; the flowers of horny texture, and beautifully marked with purple, orange, yellow, and black.

Although an orchid, and generally grown in a stove, the plant thrives much better in a more moderate temperature, and blooms freely with window-culture.

It thrives best in a peaty, sandy soil, not too finely pulverized, and with good drainage.

No special care is required beyond keeping the plant clean, and avoiding rotting the roots by over-watering. The blooming season is from December to April, and individual flowers often remain in perfection three months. After blooming, the plants begin to grow, and should then have

plenty of light, sun, and water. When growth is perfected, give less water; for, during the latter part of summer and the autumn, the plants will be at rest. Frequent repotting is not required, and the plants should only be shifted when they outgrow the pots, or when the soil becomes too close or sodden.

Plants may be obtained at any florist's, at prices varying from seventy-five cents to fifteen dollars, according to the size.

The old Jerusalem Cherry (*Solanum Pseudo-capsicum*) is of easy growth in the window. The flowers are small, white, and insignificant; but the bright orange-red berries are very ornamental.

No plant is more easily raised; for seeds vegetate freely, and one berry will give fifty plants. The foliage is dark green, neat and pretty, and the growth of the plant is symmetrical.

The best way to obtain a stock is to sow the seed in early spring, and plant out the seedlings in the border during the summer. Before the first frost, pot them, and grow them in the window during the winter; the next spring they will flower, and by autumn be loaded with berries which will remain on all winter. The plants sometimes produce berries the first year. This plant is very subject to red spider, and requires some attention to shape its growth.

Solanum capsicastrum is a mere dwarf species, very ornamental when in fruit; and there is also a pretty variety with variegated foliage.

Both of these may be easily raised as above directed. All thrive in common garden soil.

Glen Ridge, April, 1869.

(To be continued.)

YORKSHIRE HERO PEA.

This is one of the finest of the newer peas, rich, sweet, and of a pleasant flavor. Planted in moderately strong soil, it did not grow this season above two feet high, and bore a very good crop, fit for the table three or four days after the Champion of England, planted alongside it at the same time.

J. M. M., Jun.

THE WILD ORANGE OF THE SOUTH.

In the extreme Southern States of our Union, but especially in two of them, Texas and Florida, large groves of wild oranges are found growing in a wild or uncultivated state. These are of two kinds, — the sour and the bitter-sweet.

In Florida, these wild groves are found in the rich hummocks, and vary much in extent, — from a few solitary trees in dense hummocks amongst the heavier-growing timber, as live-oak, ash, hickory, maple, and palmetto, to large groves of some hundred acres or more in extent. Groves are said to exist in Florida which cover five hundred acres, with seldom any other trees amongst them except a few scattering live-oaks. These groves do not always consist of one variety of orange, but often are composed of both sour and bitter-sweet; though, as a general thing, the bitter-sweet has its own particular part of the grove. The fruit of the bitter-sweet orange is quite pleasant when denuded of the white portion of the rind and skin; for then the parenchyma is as pleasant to the taste as a sweet orange. It is much dryer, or contains less juice, than either the sour or sweet. The skin is thicker than a sweet orange, but differs very little from that of the sour orange, being lighter colored. While on the tree, the best judges could not detect any difference between them. The sour orange has a thick skin, or rind, often an inch thick; and has a very acid pulp, with a great quantity of juice: it equals in acidity the lemon or lime, and is much used in Florida in place of the lime or lemon. Both the sour and bitter-sweet grow to an immense size; specimens being often found that measure five or six inches in diameter. They are quite prolific, and seldom fail to produce a full crop.

Probably no writer can so wield the pen as to describe the beauties of a grove of fifteen or twenty acres of orange-trees in full bloom. It is a sight to be seen, not to be described. Were one to try to describe it, he would be considered as drawing largely on the imagination. It is difficult to convey an idea of thousands of full-grown, healthy orange-trees in full bloom, and yet full of golden fruit, the rich perfume from the blossom-laden trees, the beautiful fruit, the dense shade, the multitudes of sweet-singing

and gaudily-plumaged birds. To add to the picture, we have perhaps a clear, beautiful lake in the centre, with a white, sandy bottom, in which the fish play lazily about, unless disturbed from their pastime by the loud splashing of an alligator; cool, gentle breezes, rustling leaves, and the ground whitened with fallen blossoms.

To come to the economical use of these rank groves, which cover so large an area in the State of Florida alone, we may say that many of them could be converted into sweet-orange groves, and doubtless will be so changed when the country is more settled; but, even at present, they may be made subservient to man's use in the arts and manufactures. Many articles of much value can be produced from them. The sour orange forms a tree about fifteen or twenty feet high; and in their natural groves so thick do they grow, that they entirely shade the ground. Probably no less than two or three hundred of these trees can be found on an acre. Now, a healthy, full-grown tree is computed to bear at least three thousand oranges; but, in a grove where they are so much crowded, they cannot bear so many. If they bear a thousand a piece, it can be seen that there is an immense amount of fruit. Each year, this fruit is wasted.

From the flower to the dying tree, each part can be used for the benefit of mankind. The beautiful white perfumed flowers can be gathered under the tree in the spring, not by the handful, but by the wagon-load. By distillation, these blossoms yield the *oil neroli*, or oil of orange-flowers, which now commands a high price in gold, per ounce, for perfumers' use. A few weeks later, quantities of the young oranges about the size of peas can be found on the ground; and these, distilled, produce oil of *petit grain*, — an oil worth less than that from the flower, yet of good price. An oil can be distilled from the leaves of the tree which much resembles oil of *petit grain*, but is a little lower in price. The wood of a superfluous tree can be made into articles of ornament; is hard, light yellow, susceptible of fine polish, and can be used as a substitute for box-wood for engravers' use. The bark from the living tree furnishes one of the most pleasant of all bitter tonics, and is considered almost a specific in intermittent and remittent fevers. The bark of the bitter-sweet orange has a high commercial value: it is largely imported, and used in the manufacture of bitters. Bitter-sweet

orange-bark is one of the essentials used in the manufacture of curaçoa, — a high-priced and highly-prized liquor.

The fruit of the sour orange yields many things. Of these, first is the oil of the peel, called *oil auranti*, or oil of orange, used in confectionery and perfumery, and worth two or two and a half dollars in gold per pound. Then comes the orange-peel of commerce, the best of which, that of the bitter-sweet orange, is worth in its dry state, as imported, from eight to ten cents per pound in gold. The juice of the sour orange yields a large quantity of citric acid, worth in market a dollar per pound. The juice and pulp after the extraction of the citric acid yields quite a quantity of saccharine matter, which can readily be converted into alcohol.

Again: large cargoes of these sour oranges are annually sent from Spain to Glasgow and other Scotch towns, where they are manufactured into a sweet confection, highly appreciated by those able to afford it. This sweetmeat is familiarly known as Scotch marmalade, and is made entirely of sour oranges. Some of our leading firms in the United States who are engaged in this line of business import from Spain great numbers of these oranges, and ignore our own home-production: surely not from economy; for we can furnish the sour orange for one-twentieth of what it costs to import them.

A pleasant wine (?) is made from the sour orange; and it is much more palatable than much of the stuff drunk under the name of wine. It has a taste like fine old Madeira. There are many families living in Florida who hardly use any other wine at table than this. It can be purchased in many of the Florida towns, but never, I believe, reaches the North. Much of it is manufactured in St. Augustine, where the sour orange grows luxuriantly.

THE BEURRÉ BOSC AND PARADISE D'AUTOMNE PEARS.

By Robert Manning, Salem, Mass.

Probably there is not another instance in the history of pomology, of two pears, so strongly resembling each other in general appearance, and yet, when carefully examined, so undoubtedly distinct, as the two named at the head of this article. Both have now been long enough known to establish a character as worthy of general cultivation; yet we not unfrequently hear the inquiry at a horticultural exhibition whether the two are not identical. The Beurré Bosc was first fruited in this country by my father, as early as 1837; the scions having been received from the London Horticultural Society. From that time, it has continued to produce with remarkable uniformity its crops of fruit, which, being evenly distributed over the tree, presenting an appearance as if thinned, are always of fine size and quality. In beauty of form, it excels any other pear, its outline not only being composed of "lines of beauty," but also exhibiting the true pear type; and the favorable impression which it always makes, is, no doubt, greatly owing to this characteristic. Its color, cinnamon russet, changing to golden russet at maturity, is one of the most attractive in which a pear can be clothed. The fruit, to be in perfection, must be allowed to become fully ripe; if eaten too soon, its rich flavor and melting texture will not be realized. Though the tree is not so vigorous as some other kinds, I have never found it tender; and, in a good soil, it will satisfy all reasonable expectations. On the whole, it cannot be too highly recommended either for the amateur or market. For the latter purpose, though it may not produce so many bushels as some varieties, yet, as it will always command the highest price, the crop will probably bring as much money as any. Its season is October and November.

The Beurré Bosc appears to have been originated by Van Mons, about 1807. The confusion between the Beurré Bosc and Calebasse Bosc, which latter seems to have been the original name of the kind now so widely cultivated as Paradise d'Automne, has been greater in Europe than in this country. Both kinds are figured in the "Album de Pomologie," on the same plate; and the editor remarks that their his-

tory is truly a labyrinth: but, after elucidating it at considerable length, he finally concludes, that, for a long time, there have existed two pears having a great analogy between them as to the form, color, and taste, but distinguished by a different season of maturity, and by the characteristics of the trees; that these two varieties have been indifferently called Calebasse Bosc, and regarded by a great number of persons as one and the same variety; that one of these, the Beurré Bosc, has a certain date, and sprang from seed with Prof. Van Mons about 1810, while the other, the Calebasse Bosc, is of unknown origin and date, but certainly older than the Beurré.

The same writer informs us, that there is in the garden of M. Bouvier, at Jodoigne, a tree of the Beurré Bosc which was grafted a short time after its first production, that is, about 1810, the grafts having been received from Van Mons. There were also two fine trees of the Calebasse Bosc, which are described as covered with beautiful fruit of golden-russet color, resembling superb girandoles, the grafts of which were received from the same source. It is remarkable, that, while the name of Calebasse has been applied to both these fruits, the term Beurré has been throughout restricted to one, and that the least buttery of the two; and another anomaly is, that the Beurré is much more of calabash form than the Calebasse.

Although the Paradise d'Automne is older than the Beurré Bosc, it was not introduced into this country until some years later. Its first fruiting was in 1844, on a tree grafted by my father in 1840, or a year or two previous. From this tree, the greater part of those now growing in this country have probably been propagated. The source whence the grafts were received is unknown; but I am under the impression that they were brought by Mr. William Kenrick from France, where it probably received the name by which it is now so generally known. The color of the young wood resembles that of the Bosc; but, while the shoots of the latter are short and blunt, those of the Paradise are long and tapering, and the growth is very vigorous, at first upright, but afterwards waving and horizontal. Though the individual leaves are not as large as those of the Bosc, the foliage as a whole is much thicker, and in the flowers a very marked distinction is noted, those of the Bosc having narrow petals at a distance from each other, and also very widely spread in the

corymb. The fruit of the Paradise is smaller, more angular and less regular in shape, than that of the Beurré Bosc, and ripens decidedly earlier. It is of more melting texture than the Beurré Bosc, and, to my taste, of much finer flavor, having the sweetness and acid mixed in exactly the right proportions. I do not think the acid so prominent as to lessen its value for market, as has been stated by some. The tree being so very vigorous, it does not bear abundantly while young; but as soon as the growth is checked, it produces freely. The fruit should never be allowed to ripen on the tree, as it is apt then to be dry and woody.

Neither of these pears succeeds on the quince-stock.

The similarity of the two varieties would point to a common origin; but, from what is said above, it seems that they were not produced at the same time, and we have no information whatever as to the seed from which they sprang; but the resemblance of the fruit and wood, especially of the Beurré Bosc, to the Jalousie (of Duhamel) has suggested to me that that variety was not improbably their parent.

HATCH'S IMPROVED EARLY TURNIP-BEET.

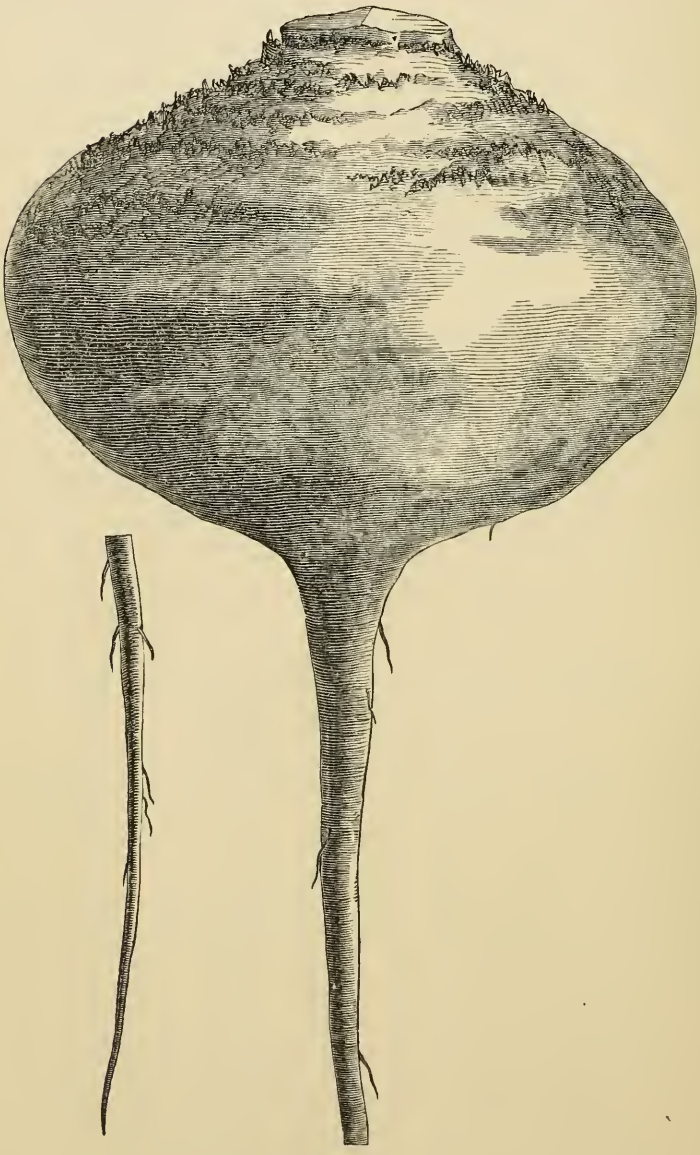
By C. N. Brackett, Newton, Mass.

This new beet, of which we give a drawing, is undoubtedly one of the best, if not *the* best, early beet we have. It was originated and introduced by Mr. Anthony Hatch of Saugus, Mass., and obtained by him by a careful system of selection, continued for many years.

Although of comparatively recent introduction, it has already become exceedingly popular with the market-gardeners about Boston, and is the standard variety with many large growers.

When well grown, and of average size, the roots of this variety measure from four to four and a half inches in depth, and about four inches in diameter. Form turbinate, considerably flattened, more so than with the common turnip-beet; crown quite small, with a very slender tapering tap-root; skin dark reddish purple; flesh deep red, very fine-grained, sweet, and tender; grows rapidly, and is one of the earliest sorts we have; a

quality, which, together with its fine color, and smooth, symmetrical shape,



HATCH'S IMPROVED EARLY TURNIP-BEET.

makes it particularly desirable as a market variety.

NEWTON, Aug. 18.

LET EVERY MAN OWN HIS GARDEN.

The results of human life are small differences between enormous quantities. The babe of eight pounds grows into the man of a hundred and fifty-eight by the addition of many tons of food and drink, and subtractions amounting to just a hundred and fifty pounds less. The frugal mechanic who has laid by a thousand dollars in twenty years, has done so, perhaps, by earning ten thousand dollars, and spending but nine thousand five hundred: the other five hundred is interest. A small amount of daily waste would have swallowed this balance, and made him a recipient of the public charity at the first distress.

France utilizes such products as America wastes. Of a dead horse, not an ounce fails to be turned into money. Strip that gay and gorgeous people of the wealth saved by utilizing offal, and you would see it a nation of starving beggars. Most poverty comes from waste, either of time, of Nature's wealth, or of the results of human labor.

If the food and clothing needed by a family for a year were composted into a manure-heap, it would be a pile of no inconsiderable value. Most of it ought to find its place there ultimately, and be of service to its owner. There are men who have moved twenty times in thirty years, and have carried in their last migration less value than they have left behind them in refuse to annoy and disgust their successors.

If the compost-heap be the poor man's savings bank, it is one that pays a high rate of interest. Measure off two equal pieces of ground; treat them exactly alike, except that you give one of them six dollars' worth of manure. From the other you may take forty dollars' worth of cabbages; from this, a hundred and forty.* Here is an extreme case of more than a thousand per cent interest for five months; but a hundred per cent is a very common and moderate rate.

And the poor man's savings bank pays a compound interest. The pear you raise comes not from the soil alone: the soil throws up a net of leaves to catch the riches of the air. To him that hath a rich soil shall be given carbonic acid from the atmosphere; but from him who hath not shall

* See "Gardening for Profit," p. 32.

be taken away the very food he has bought when he exhales it in his breath. If nothing be sold off a place, the annual contributions of the atmosphere to its fertility must go on increasing for an indefinite period. The poor widow whose garden furnishes her vegetables, while her needlework buys her phosphorus and nitrogen and defrays her other expenses, will find every year adding to her resources.

The gardener gives, then, a new meaning to the sarcastic epitaph of Carlyle on the English squire, —

"*Si monumentum quæris* FIMENTUM *adspice!*"

If you seek his monument, look to the *dung-hill.*

In a happy, quiet, well-ordered life, it is usual for a man to spend the last thirty-three years, on an average, under one roof, and that his own. The very sweepings of that time would make a vast pile, and it is put at compound interest every year. The washings from one pair of honest hands for a third of a century amount to no trifle. The opposite of this picture is the unfortunate tenant who "lards the lean earth" for those who succeed him, and leaves a trail like a snail over twenty door-yards or wretched gardens, — a trail that might shine with real silver; but he leaves it dirt.

In our argument, we start from the lowest possible ground, — the very dung-hill. Even here we have found adequate cause for wealth and poverty. But it is a small part only of the whole case. The tenant pays the interest of the money invested in the house, its taxes, and a sum for repairs, and contributes to a sinking-fund for rebuilding; or else he wrongs the owner. He pays for the privilege of abusing the premises, of neglecting the one stitch that saves nine. But he who lives in his own house is always improving something, — adding something to save labor, increase comfort, or look better. But it is the garden that shows the greatest difference. Under the owner's hand, its growth is as sure as that of the willow by the water-side, till the grandchild plays beneath the shade of the ancestral pear-tree. In the rented garden, the rhubarb and horse-radish are perhaps the only perennials. Choice vines shelter the owner's head; burdocks and beggar-ticks cling to the tenant's clothes.

We are still on low ground. One's own house and garden are a savings

bank for the investment of minute fragments of time. The owner hurries home from his work to some little job in his garden, when he would otherwise lounge on the way, or stop to take a drink or a smoke. A little work done at dusk may make a great show twenty years later; and a disturbed mind, perhaps, was calmed in the performance of it. Years ago, perhaps, his wife left the drudgery within, to breathe a little air, and plant the rose that now covers her porch. The tenant's wife may at the same hour have exchanged a little scandal with a neighbor, which has long since ripened into a law-suit destined to fill two families with bitterness for a whole generation.

One minute per day spent in a garden for twenty years, amounts, with compound interest, to nearly a month's work. A huge willow cost only one-half minute a quarter century since. A magnificent chestnut represents an hour's work of a son long since dead. That row of pear-trees stands there because two boys decided to forego the privilege of going to a militia-muster. And at every moment, for months together, your garden is asking something at your hand; and it saves what you give it, and at the same time soothes you, and improves your health.

We rise to higher ground; and your thoughts have already run before our words. The garden is an almost necessary aid in training your children. A child who never learns any manual occupation besides play can have no solidity of character. Again: your beloved must be a house child, a garden child, or a street child. Unhappy the youth that must choose between the house and the street! The girl is confined to the house, to the detriment of her health; the boy takes to the street, to the still greater injury of his morals. Happy the son or daughter in whom is developed a passion for gardening! An able commentary on the Holy Scriptures may never do so much good as Miss Warner's "Three Little Spades." But, if you do not own the garden, your labor is like water put in a sieve. The garden abhors the tenant, and the tenant's child hates gardening.

We close with one more consideration. The child becomes an adult, and must leave the home of his birth. How does it live in his recollection? If his parents owned their home, and it was their life-study to make it a happy one, affection wanders over every room and through every closet. There stands the bed on which my sister died. This is the door which

pinched off a nail from my finger. There, in the shed-chamber, is the corner where I established Ellen's baby-house; here the nail on which my skates summered. In the garden, the lilac, the quince, and the damson, all have their memories. Father and mother are gone, and brother now has the homestead; but it is in no small degree the embodiment of the souls of the departed. To such a relic, St. Peter's bones are a mere trifle. They were never so much a part of the apostle as the little contrivances of the departed were a part of his soul.

But alas for him whose parents were wont to move annually! His early recollections are all a jumble. His bed was in every part of the house, which fronted every point of the compass. Days of confusion stand prominent. In such a moving, the piano received that ugly scratch; in another, the screw of the coffee-mill was lost; and, in the next, the drawer from the candle-stand. In such a house, our three-weeks' stay was but a hopeless battle with vermin; at another, we discovered, after months of sickness, that the well received contributions from neighboring cesspools. Surely it could be but little worse to connect one's earliest recollections with a foundling-hospital.

"Home!"—sacred word, known to so few languages of earth, and to none better than the English. It does not mean the parks and *cafés* of Paris, or the streets of Naples, but a roof under which each watches for the happiness of each and of all. The first earthly home was in a garden; and the employment of its sinless, blessed occupants was "to dress it and to keep it." Without a garden, no home is perfect; without ownership, a perfect home is not even to be thought of; and, without a home, no good degree of earthly happiness. Therefore LET EVERY MAN OWN HIS GARDEN.

CELASTRUS SCANDENS.

THIS hardy native climber deserves more general cultivation. It is variously known as Roxbury Wax-Work or Climbing Bittersweet. For covering a trellis, there is nothing better; and it takes care of itself if once planted. Whether in foliage or fruit, it is ornamental.

HOUSE-PLANTS.

How to make plants grow in the house is a much more important question than how to make them grow in the greenhouse. Few persons have conservatories. Almost every person has a window at which the spring and summer of plant-life may be fostered and maintained during the long winter months.

Formerly, almost every house had its plants. The children and the flowers were the chief ornaments of the old homestead. During the last generation, or since the introduction of furnaces and gas, the cultivation of plants in our houses has steadily declined. I propose now to show that this great deprivation and loss to our modern houses is unnecessary, and that plants may flourish as well under the dispensation of gas and the furnace as in the days of the old wood-fire and mould-candles.

It may be true that plants will not grow in an artificially desiccated air. The skin and the delicate membranes of the throat and lungs parch in the dry furnace-heat just like the leaves of the plants. The freshest complexion grows wizened by a winter of this sirocco. What, then, shall be done in our furnace-heated houses? Simply introduce evaporators, which shall furnish to the air at least one-half as much moisture as the air naturally contains *at the same temperature* in spring or summer. The shrinking of the wood-work of houses, or warping of furniture, are indications of an unnaturally dry heat, which is fatal to plant, and injurious to animal life.

It is true, also, that plants will not thrive in close rooms charged with the sulphurous acid escaping from the combustion of anthracite, or a product of combustion of impure illuminating gas; and, in the same atmosphere, the throat and lungs of human beings will suffer more or less severely. What is the remedy? Open a ventilator into the chimney, near the top of every room, if you can do no better; and keep it open, at least during the evening, while the gas is burning.

I am prepared to say that furnace-heat and gas-light are no obstacles to the cultivation of plants, observing only the precautions which are equally essential to human health. I think the rule should be broadly stated, that any room in which plants refuse to grow is unfit for human life.

In this connection, it is proper to enter a protest against the barbarous habit of excluding the sunshine from inhabited rooms, especially in winter. Its effect is almost as depressing on children and delicately-organized women as upon plants.

There is one other obstacle to the growth of plants in the modern house; which is, the plague of insects. Some varieties, especially the microscopic red spider, are uncontrollable in a dry atmosphere, but retire at once before proper evaporation. For the rest, improved resources, of which I may speak at another time, make it tolerably easy now to keep house-plants free from parasites.

To illustrate theory by fact: I heat a moderate-sized house, containing about twenty thousand cubic feet, with a furnace. I find it necessary to expose seven square feet of evaporating surface in the air-chamber of the furnace to produce a proper degree of atmospheric moisture. Half this surface would answer with better exposure. About a pint of water is evaporated in twenty-four hours for each seven thousand cubic feet in the house in raising the temperature from 40° to 70°, two pints in raising it from 30° to 70°, three pints in raising it from 20° to 70, four pints in raising it from 10° to 70°, and about five pints in raising it from zero to 70°. Thus, in the extremest cold weather, it requires nearly six pails of water in twenty-four hours to keep the atmosphere of the house soft and agreeable, though not appreciably moist; that is, not nearly as moist as the ordinary summer air at 70°.

At twelve windows, north, east, south, and west, of the house thus heated, I have about seventy plants, mostly of the common kinds, in very fine condition. During several years, I have never known them to be injured by the furnace-heat, and never by the gas, freely consumed, except in the single instance of an ivy growing near the ceiling of a room during an accidental leakage of gas.

I find that ivies thrive peculiarly under the conditions described, growing well in positions farthest from the light; as, for instance, on the hearth, forming a magnificent fireboard. Six or eight varieties of variegated-leaved ivy thrive equally well with the common.

I find that roses which have blossomed during the summer in the ground, been potted after hard frost, stripped ruthlessly of every leaf, and

trimmed in almost to bare poles, are covered with buds within a month at my window, and blossom all winter, great authorities to the contrary notwithstanding. This winter, a Madame Bosanquet has led all the rest, showing buds in three weeks, closely followed, however, by the Agrippina, Souvenir de Désire, Safrano, Hermosa, and Sanguinea.

The Chinese primrose and coral-drop begonia are never out of blossom with me in winter. A heliotrope, occupying a whole window, gives hundreds of its clusters, beginning in December. The orange, lemon, myrtle, and diosma grow with the greatest ease; and the Daphne odora and laurustinus blossom in their season. Among other plants which I find it good to have in a house, I will mention the varieties of winter and spring blooming cactus, geranium, oleander, arbutilon, calla, Tradescantia zebrina (large and small leaved), hoya, maurandia, tropæolum, saxifrage, Coliseum vine, Madeira vine, and the usual bulbs. *Wm. F. Channing, M.D.*

PROVIDENCE, R.I.

THE STORY OF VINELAND.

(Concluded from Vol. V, p. 345.)

OTHER novel and advanced ideas were adopted at the outset, which, in their good effect, can only be reckoned as second in importance to those already enumerated. Chief of these was the barricade erected against that curse of new colonies, the land-speculator. The farms on this tract were all sold with such restrictions as made prompt improvement absolutely essential, under penalty of forfeiture of titles. This plan, as can readily be seen, secured immediate and continued growth, and was, in effect, the best species of co-operation, as each, by advancing his own interest, advanced the interest of his neighbor; and none could share in the common profit without having paid the price.

The second of the minor principles consisted in the doing away with fences. This is a greater gain than may at first sight appear. An intelli-

gent writer estimates that the fences in the United States have cost more than all the railroads, bridges, and public buildings: and a careful computation forces the conclusion, that it would cost at least five hundred thousand dollars to enclose the improved places in Vineland; and that the expense for necessary repairs could not be less than twenty per cent of that amount, or a hundred thousand dollars per year. But this is not the only saving effected. Besides relieving the settlers of a heavy burden, the arrangement necessitates the soiling of cattle; and thus large quantities of fertilizers are secured. It also induces the cultivation of root-crops; and it has been proved that a given quantity of land in root-crops will support six times as much stock as the same land in grass, and that the manure is much more valuable. In Germany, where the no-fence custom was originally introduced, the effect has been the redeeming of entire districts which had become waste by bad farming.

Other noteworthy points in the management were those which required that each owner seed to grass the roadside contiguous to his premises, and set shade-trees. The streets were all laid out and finished at the expense of the founder; and the colonists were granted some valuable privileges, such as free access to the muck, which is a rich fertilizer, and, in the opinion of some, even more serviceable on this soil than marl, lime, gypsum, or phosphate. Mr. Landis has also proved in other ways that he regards the permanent prosperity of the people; and it is intimated that such future proceedings are contemplated as will augment the evidence of this fact. But, after all, perhaps he deserves little credit on this score. Strategic considerations would have prompted to this course as the best he could have pursued: and the only difference between him and others who have attempted similar schemes is, that he had the superior sagacity to see that an enlightened self-interest, and a steady regard for the public welfare, are closely allied; that the one suffers when the other is neglected. It is a question of phrenology more than of philanthropy, of brain more than of heart; and thus, while the nine would have had the penny prudence, and never suspected the pound lost, Mr. Landis, more highly endowed, stepped in, and won the distinction of being the greatest colonizer of which there is any account, while at the same time he was doing the best possible thing for his balance in bank.

Not many days ago, the writer visited Vineland. The place has an air of newness; but the vigor of youth is equally apparent. The streets and avenues, of which a hundred and forty miles are now finished, are wide, straight, and well hardened, and grassy to the carriage-line. They run parallel, and cross each other at right angles. Some are nine miles in length, and all have sidewalks. The shade-trees along the margins are small, but frequent, and, with increased growth, must add greatly to the attractions of a drive. The absence of fences particularly impresses a stranger; not altogether agreeably, however. It seems a little shiftless, at first glance; but, on the other hand, an intimation of hospitality is conveyed, which more than compensates. The least costly of the houses are neat and well constructed. There are many expensive and beautiful dwellings: one or two are almost palatial. Standing back from the roadside (no one is permitted to build within twenty feet), and with frequent flowers and climbing vines around them, the homes look cheerful and inviting. Churches, schools, parks, and public buildings, are numerous. The farms are from five to twenty-five acres in extent, and the cultivation is everywhere excellent. The industry and thrift of the people are especially observable: every one appears to have occupation, and to enjoy it. Even the women work in their gardens, and seem well enough entertained. The character of the population has, necessarily, been materially influenced and rendered select by the excellent policy which governs the management. The advance in real estate has been quite marked: in consequence, many of the pioneers have sold out, and moved away. There are still numerous places in the market; but prices are high. Nevertheless, changes are frequent. Many arrive who want improvements, and are willing to pay for them; and hence it often happens that a man who bought early is induced to part with his original purchase, and, with the increased capital thus obtained, retreats to some remoter point on the same tract, and begins again with more land, and ready money in his pocket. The healthfulness of the place cannot be too highly commended. The climate is mild, and especially agreeable to weak lungs. The same may be said of most parts of South Jersey. The writer is acquainted with several persons who were once severe sufferers from lung-diseases, but who have been quite restored by a residence at Hammonton, Bricksburg,

or Manchester; and it is related that the Vinelanders who have had similar experience may be counted by the score.

But the question arises, What of the future? The prospect is certainly cheering. At the first, and for two or three years, there were clouds, doubtless not a few, in the Vineland firmament. The earliest settlers were mostly poor, and many seemed peculiarly unfitted to cope with the disadvantages that hedged them in. Of course, these suffered; but, even for the best and most hopeful, there must have been dreary days. From the weak, the faint-hearted, the drones in the hive, lamentations were heard. Later, the skies cleared somewhat: there came pleasant suggestions of golden harvest in the soft sunshine of spring, and roses were growing at the door. Later yet, the boughs bent: the bread had returned. Still there is discontent in Vineland. Rachels are there who refuse to be comforted. Mr. Micawber is there, waiting for something to turn up. Mrs. Gummidge is there, thinking of the Old One, and hesitating to throw the worn shoe for luck.

But the question of continued success largely depends for answer on the capabilities of the soil. The soil is a gravelly or sandy loam: there are no stones, and the ease of cultivation is noteworthy. The land needs fertilizing for most crops; though some do well without manure, — the peach, for instance. A liberal application of lime will bring good clover; and a field of corn was pointed out, which followed a clover-sod, and which promised a yield of sixty bushels (shelled) to the acre. It would, perhaps, be safe to take this as an exception; though there is no reason why it should not be the rule. Other cereals are produced, and appear to prosper; but the proximity of the Philadelphia market makes the cultivation of small fruits and vegetables more profitable. The soil seems well adapted to the grape. We saw, for example, eighty-eight Concord vines from which eleven hundred fine clusters had just been taken; and another vineyard of twelve hundred vines yielded a crop which sold for twelve hundred dollars. Pears, sweet-potatoes, and melons are also in their element here; and at the annual fair, which was in progress during the writer's visit, the show of seasonable productions was large and satisfactory, — so large and satisfactory, in fact, that it would have done credit to the husbandry of the richest

county of the Empire State. Of course, the picture was hung in the best light.

A ride through the pleasant streets of Vineland, a ramble among the fragrant vineyards and well-kept gardens, a glimpse at the home-life in families, leave a genial impression of substantial prosperity and happiness, without tempting to odorous comparisons, or especially suggesting golden dreams of Eden. One marvels much at the achievement of seven brief years, even in this eventful American world of ours; and old Mr. Phosphate, whose mind is still unimpaired, and who took with him a sturdy prejudice against the place, is quite won over, and grows of late, I sometimes think, perhaps a trifle too enthusiastic in his praises.

A. B. Crandell.

GERMINATION OF GRAPE-SEEDS.

One would think, from the number of grape-vines that spring up from seed in June, in every rich garden where there are bearing vines, that, to get seedlings, it would only be necessary to plant ripe grapes in good soil in the fall. Yet in practice it has been found that but a small percentage of the planted seeds ever germinate.

I planted on the 8th of last November twenty-three varieties of grapes in a rich bed, and, up to the first of July of the present year, only nineteen kinds had come up, and of these, in several cases, not one-half of one per cent of the seed had germinated.

The Martha, Adirondac, Mr. Bull's 51, and Allen's Hybrid refused to come up at all; while the Iona and one of Rogers's Nos. germinated with the greatest freedom. Two or three fine bunches of Dianas have produced one solitary plant, while Rogers's 9, the largest Arnold Hybrid, and the Eumelan have come up tolerably well. In no case, I think, has twenty per cent of the seed come up.

J. M. M., Jun.

NEW VEGETABLES FOR 1869.

By Fearing Burr, Hingham, Mass.

A greater number of fine new vegetables have been introduced this season than for several previous years. We notice one of them below, and shall hereafter call attention to others.

Dwarf white-seeded, waxen-podded Bean. — This new variety was sent out by Ernst Benary, seed smanat Erfurt, Prussia, in the spring of 1869, and promises to be a valuable accession to our list of dwarf garden-beans. The plant rarely attains a height of more than ten or twelve inches, and the leaves are relatively small. The pods are rather short and broad, somewhat flattened, of a delicate creamy or waxen-white color in all stages of growth, and contain about four medium-sized, roundish, compressed white seeds.

Plants from seeds sown May 20 afforded pods for the table about the middle of July; and the crop was ready for harvesting the 20th of August.

The size of the plant considered, no variety excels it in productiveness. From top to bottom, the stalk was literally crowded with beautiful pods, which, instead of being developed in succession, were put forth at one and the same time, progressed in growth, and ripened off together. As a "snap-short," or string-bean, it is recommended for cultivation; though many sorts inferior to it for shelling in the green state find a place in our gardens.

Compared with the Dwarf Indian Chief, which it somewhat resembles, the plant is of lower growth, the leaves are smaller, the pods are broader or more flattened, and the seeds are pure white; while those of the last named are indigo-blue.

Though the pods have not quite the roundness and solid fleshy character of those of the Dwarf or Running Indian Chief, yet they possess in a large degree the same delicate, marrowy quality and flavor for which these sorts are so justly prized. For small gardens, or where space is limited, there is no variety superior to this now in cultivation.

The seeds employed in the trial were received from Mr. George Everett, seedsman for Messrs. Ames & Co., Boston, Mass.

Critique on August Number. — I am glad to welcome Mr. Parry when he comes to tell us about strawberries in New Jersey ; for no one is better qualified to tell. So they have got to change their tactics in New Jersey because they can't compete with Southern growers, though we have looked to them for our supply of early strawberries ; and we must hereafter look to Norfolk. Truly, the Norfolk cultivators are playing the mischief with our ideas of the fruit-season. Well-grown Seckel Pears reached Boston early in August. Then, besides the Norfolk fruit, the papers announce that a car-load of Bartlett Pears has been despatched east from San Francisco. But I am running away from Mr. Parry, and I must come back long enough to say that the kind of fruit that will bring the most money in market isn't always good enough for *my* home-use ; certainly not if it is the Wilson Strawberry. But I am glad to hear so good an account of the Charles Downing, Boyden's No. 30, and Kentucky.

A Day among the Rhododendrons. — And wouldn't I like to have been there too, to feast my eyes on such magnificent masses of rhododendrons and azaleas, and then refresh them by gazing at the perfect lawn, with its groups and masses of pines and hemlocks, with their shadows lying so softly on the grass !

Drainage of Flower-Pots. — Of course, we all expected to hear from Mr. Henderson in answer to Mr. Veitch ; and here he is. Well, one thing is admitted on all hands, that plants do need drainage ; and I think it has been conclusively proved by actual experiment that a porous soil and a porous pot is ample for a little plant which is to grow in a pot but a few weeks or months : but when it comes to a tree which must remain in its box or tub for years, why, I confess, though Mr. Henderson may call me an old fogy, that I believe it will need some more assistance in the way of drainage. But I have little fear of his calling me

an old fogy for that, for I understand his remarks to apply only to plants in *pots*, and I think his views would agree with mine in regard to those in the tubs and boxes. At any rate, nobody will take the trouble to put crocks and charcoal in their pots when there is no need, and if there is not it will soon be found out, whether Mr. Veitch accepts the challenge or not; and if we find we have been doing a great deal of needless work by way of drainage, we shall all be grateful to the man who first had courage to step out of the path of routine.

Another of Mr. Merrick's annual papers on Strawberries. — How is it that so few cultivators around Boston are engaged in testing any considerable variety of strawberries? We hear of no exhibitions of such collections as are shown at New York, and it won't do for the Boston folks to lag behind. It is of no use to say that nine-tenths of a great collection are worthless: we know beforehand that it will be so; but the point is, *which* are the worthless ones, and which the good? and Mr. Merrick has done more than any one else in Massachusetts, this year, to answer this question.

Rhododendron Experience. — A checkered experience truly! What would we give to know of a dozen fine rhododendrons which could be relied on to stand the severest winter! Mr. Rand thinks the data are hardly sufficient to determine them yet, or the causes why all are not hardy; and I don't think it is worth while for me to undertake what he can't do: so I shall echo his hope that others will add their experience, and then we shall ultimately arrive at some certain knowledge. But think of the cost of this rhododendron experience! — the dead, and, worse, the half-dead plants, that have been nurtured so carefully, — ye who profit by it.

The Lake-Shore Grape Region. — Oh, if my lot had only been cast in such a grape region, though that lot were only a half-acre! That would have been enough to give me all the grapes I could eat, and then there would have been some satisfaction in sitting under my own vine.

The Petunia. — How is it that a patriarch in horticulture, like Mr. Breck, hits on the very things that are wanted to-day by the million for their flower-gardens? He has been engaged in floriculture, to my knowledge, for thirty years past, and how much longer I dare not say, and yet his heart seems as young and his zeal as ardent as when he began; and this article is a proof of it, and the illustration is as good as the article. But I don't agree with him that the odor of the petunia is disagreeable. I have stood by a bed on a summer evening, and thought their sweet perfume very enjoyable.

The Brant Grape, in my opinion, comes from the right quarter. Please understand, however, that I have in mind cold winters and short summers. My lot is cast where these prevail, and against them I must provide. In the success of a very large proportion of the sorts I have had under trial, I confess I have been disappointed. They are not adapted to open culture in New England or the Northern States. You may set a vineyard with such; but you had better omit the purchase of your wine-press till after harvest. It is my honest conviction that there are scarcely half a dozen good varieties of the grape now cultivated, hardy and early enough for New England, or a climate corresponding or which will yield the grower in such localities an average of four pounds of ripe grapes each year for every vine, taking ten years together. And this

assertion is based on an experience of more than thirty years. Perhaps my want of success may be the result of a want of skill ; but can a majority of those who have confined themselves to strictly open culture show a better record ?

More Notes on Strawberries, and by Charles Downing. — I sympathize with Mr. Downing in the changes which have driven him from his former home and grounds ; but the opportunity which he now has and employs of examining the "cultures" (as the French say) of others is of the greatest benefit to horticulturists, and here we have the result of his observation of strawberries in four different places ; and every one knows that his statements are most careful and conscientious, and may be relied on to the fullest extent. I hope we may hear from him often in the pages of the Journal, and that you may have many more correspondents who will imitate his example of painstaking accuracy.

Could not Mr. Manning, without plagiarism, have appended to his article on "New Varieties of Fruit from Seed," the closing remarks of the brief notice of the Romeyn Strawberry ? What a lesson the whole would make, not simply to be read, but *studied*, by the young. Limit ! why, my dear sir, there is no such thing. The finest of our fruits, the brightest and most perfect of our flowers, and the choicest of our vegetables, are only typical of the rare beauty and excellence which the future will witness : indeed, they only befit the porch of the great temple into which our children's children will some day enter. We are looking forward and upward, and marching steadily on. Not a retrograde step in horticulture is chronicled on the pages of history ; and so long as we find in human souls the hope and courage — that is the word — which can cheer and support the heart through the trials and reverses of thirty years, thank Heaven ! there never will be. With singleness of purpose, and listening to no compromise, our noble-minded horticulturists — would I had space to name them ! — lay hold upon and wrestle with Nature as did Jacob with the angel, refusing to yield until the blessing sought has been bestowed.

Too much Fruit. — You remember the time, Mr. Editor, when a dollar a dozen was thought a good price for the finest autumn pears ? Just let me tell you, that the late B. V. French, Esq., stated in an after-dinner speech, that for many years in the early part of his business-life in Boston, the choicest St. Michael Pears were common in the market at one cent each ; and, when the price was advanced to two cents, the fruit became a luxury too costly for the poor, and was sparingly indulged in even by the rich. Now, place, if you will, beside this, the remark made with regard to the prices of to-day, — "Six dollars a dozen," and "rates advancing," and the actual difference in value is before you. But, my dear sir, though this looks very encouraging for the cultivator, allow me to ask if it exhibits the real facts ? There is a seller's side of the picture which I wish to present, if you will promise not to set me down as a "constitutional grumbler," or connect me with the class of "gentlemen croakers ;" for with such I have no fellowship. But I have an orchard, embracing many of the popular varieties of the apple now in cultivation ; and in fruitful seasons, have usually a quantity to dispose of in the market. Referring to my record, I find, that, within the last ten years, I have sold the finest of autumn and winter

apples, including the Porter, Fameuse, Greening, Baldwin, Northern Spy, and Roxbury Russet, in fact giving the purchaser the choice of the best fruit of the orchard, for *five cents the peck*. On the other hand, I will frankly confess, that, during the same time, I have repeatedly sold the same fruit at five cents *each*, or sixty cents the dozen. Now I firmly believe, indeed I am unselfish enough to hope, that you and I shall again witness a similar abundance, and correspondingly low prices. As for pears, I find, that, within the past ten years, I have sold the finest Bartletts, fresh from the tree, and other equally choice varieties, at one dollar the bushel. That there will be seasons when fruit will be scarce and costly must be expected; but I think you may also rely upon the occurrence of seasons when there will again be fruit for the million. *Bismarck.*

Still more about the Naomi Raspberry. — As our friend Bateham seems to regard a further exposition of the claims of the so-called Naomi Raspberry necessary, and as his article in the July number of the Journal calls in question my former statements, I must beg your indulgence for a few words in reply.

When I wrote you of the Naomi, I was, of course, unaware that Mr. Bateham had also written upon the same subject; and though I had no idea of presenting "the adverse side" of the question, or any other than the simple truth, I was rather pleased that his article appeared at the same time, and felt contented to let the matter rest just there; and should have done so, but for his continuance of it.

Unlike my friend Bateham, I have no personal interest in the matter, beyond the simple desire to evolve the truth, and to prevent what I believe to be an attempt, however ignorant, innocent, or well intentioned, to put upon the public an *old* variety for a *new* one. And, while I utterly disclaim any disposition to cast "unjust reflections" upon any one, I do not admit that I have made "errors in regard to facts" in my former communication.

I observe, with regret, that Mr. Bateham *asserts positively* that no decision or declaration was made that the plants found in the private garden on Euclid Street were true Naomi; for I am just as positive that such declaration *was* made by both Mr. Hall and Mr. Swan, who were understood to have the largest stock of "true Naomis" extant; and, if these gentlemen were not "experts," I know not where they could be found. The subsequent declaration of the gardener, that they were "Antwerp," rendered the matter a little "mixed," but did not seem to shake the faith of the "experts" as to its identity. After-observation satisfied me that they were Franconia; and Mr. Bateham, also, now admits it.

Neither do I think it possible that I mistook Mr. Elliott's remarks at the meeting of the Horticultural Society; for I had recently received Dr. Kirtland's letter expressing *his* entire conviction that the "Naomi, as claimed by Messrs. Elliott, Hall, and others," was "no other than the old Red Franconia," and called attention to it at the meeting above referred to. I certainly understood Mr. Elliott to say, in reply, that the Naomi and Franconia were so nearly alike, that

the *only* difference he could point out was the greater hardiness of the Naomi; but of this he felt positive. I inquired, if this were so, how it would be possible for the public to distinguish between them, or prevent one from being substituted or sold for the other. He replied, "Just as easy as between the Diana and Charlotte Grapes;" knowing that I believed these varieties identical, while he thought they were not.

Now, a few words of my own experience with the Naomi. A year ago last spring, I received some very large plants direct from Mr. Elliott, which were cut back pretty closely, and carefully planted. They were permitted to bear only a few berries, and threw up strong, new fruit-canes, from which I confidently expected perfect samples of fruit the present summer. Contrary to my expectations, especially as the past winter was unusually mild, *every cane of these "true Naomis" winter-killed to the ground, and did not bear a single berry this season.*

In addition to these plants from Mr. Elliott, I planted some, the past spring, from Mr. Hall, and also the Franconia from another source; and I am compelled to say, if there *is* any difference between any of them in foliage, stalk, spines, or habit of growth, I am wholly unable to discover it. I therefore express the belief that the so-called "*Naomi*" is either Franconia, or so nearly identical with it as not to merit a separate name or description.

DELAWARE, O., July, 1869. *Geo. W. Campbell.*

NOTES FROM FLORIDA. — It is less than two years since we have had a personal interest in this place, and we commenced by making the orange-grove a specialty. By long neglect, it was overgrown with weeds and bushes, and the trees looked pale and sickly. We commenced a vigorous revolution by clearing and stirring the ground, dressing, pruning, and washing the trees thoroughly with strong soap-suds. Their foliage soon began to regain its beautiful green; and last summer and autumn they were fine specimens of life and beauty, and gave us a good harvest. They, in common with others, last winter, suffered seriously by the frost. A few were killed, but the most of them are re-clothed; yet all have little dead twigs peeping out all over. A few blossoms appeared on a very few trees. We shall pursue a similar process to that described above, this autumn, hoping that another year will bring them into a good bearing condition. The lemon, lime, and citron were killed to the roots; but all are putting out again finely. The lime has already attained nearly three feet in height. The olive was partially injured. We have one old olive-tree from forty to fifty feet in height, and in its vicinity two magnolias and a cherry-tree a little taller.

The mulberry and fig, both of several varieties, are vigorous and bear well; especially one variety of fig, which, I think, is called the Celestial, small but delicious flavor. Our ornamental trees — crape myrtle, cape jessamine, oleander, palm, &c. — were not injured by the frost. We have no good variety of plum, but have a few budded. We have no variety of grapes in bearing, except the Scuppernong; these by culture are becoming very thrifty: several other varieties also promise well. *H. B. G.*

MAY 16, 1869.

The Wachuset Blackberry was described and figured in our fourth volume, p. 220. Aug. 3, by invitation of Mr. Fletcher, we visited the Shaker Village at Shirley to see the blackberry growing. We found it quite as productive as the Dorchester, or more so ; and though, to our taste, the flavor was hardly equal to that variety, it possesses a very great advantage in its comparative freedom from thorns. None of the suckers which have come up the present season had been removed, but all were preserved for propagation, forming quite a "swamp" of plants ; yet, though the bushes are not absolutely free from thorns, they have so few, that we could move round among this mass of plants as we never could have done among a similar lot of Lawtons or Dorchesters. Although permitting the suckers to grow had doubtless lessened the size of the fruit, we found the largest berries were just the size of the largest in our cut referred to above.

New Seedling Gooseberry. — We are indebted to J. S. Graham of Geneva, N.Y., for specimens of a new seedling goosebery, raised by Mr. William Sesson of that place. It is of large size, oval, greenish-white, in appearance quite equal to any American seedling ; but the fruit when it reached us was not of the first quality. It is described by Mr. Graham as being as prolific as the Houghton, and having borne for five years without showing the least tendency to mildew. Mr. Sesson had in his garden an English variety, name unknown, and a Kansas seedling, the latter a very thorny bush, bearing a red fruit a little larger than the Houghton ; and the new variety no doubt sprang from the seed of one of these, it is supposed the English kind, as it resembles it in color. It is said to be much larger than either of its supposed parents, a more vigorous grower, much more thorny, and not so sweet when ripe. It has occurred to us that it may be an accidental cross between the two.

Note on Seedling Raspberries. — I have fruited, this year, a few seedlings from a yellowish-white raspberry, which I have had several years, but whose specific name I do not know ; and the seedlings are all identical in color and flavor with their parent, not showing the slightest variation. This coming true from seed may be a common occurrence ; but I have never seen it mentioned. No other kind grew in the garden where the parent plants were cultivated. *J. M. M., Jun.*

[The Orange Raspberry, as mentioned in another article in this number, was said by Dr. Brinckle, who originated it, generally to reproduce itself from seed ; while, of the seedlings from the Col. Wilder, some were identical with their parent, and others differed from it.

In an experiment which we made some years ago in raising raspberries from seed of the Red and Yellow Antwerp, we found that they followed their parent in color, but varied in the size of the berry and pips, and also in shape, firmness, and flavor. We consider it important to collect such facts as the above in relation to the variation of seedlings, that we may at least know what is the chance of obtaining *distinct* varieties. — *Ed.*]

"MOORE'S RURAL NEW-YORKER" is one of the very best agricultural and horticultural journals published in this country; a paper whose weekly arrival is always welcome, because we are sure of finding in every number something worth reading. If it did not get a more careful reading than some of our exchanges, we might have missed the paragraphs we quote below, and which seemed to us a little at variance with the good taste and fairness the Rural usually exhibits.

"*Wilder.* — Of course, none but the elect have had a chance to see this fruit. Charles Downing being one of that sort, and a man who knows 'just a little' about fruit, we will take his record, gathered from a letter of Mr. Wilder, which reads, 'Charles Downing is fully satisfied that it is up to all that is claimed for it, and surpasses in productiveness what he expected.' All we have to say of this is, that, to us, the manner in which it has been, or is being, sent out, is in violation of all pomological rules; and to the public, each one of which possesses a different soil and climate, it is just as much a humbug to-day as when the Massachusetts Horticultural Society made note of it under a number. It may be a good thing in Mr. Wilder's soil and climate; but take it into Missouri, Southern Illinois, or Tennessee, and various other sections, and then we shall know how long the variety will live in credit; although the originator will live forever in favorable recognizance by all American horticulturists."

We desire to say a word or two about the above.

1st, It is extremely gratifying to the large number of humble and obscure people who have seen and tasted the President Wilder Strawberry this year, to learn that they belong to the *elect.* Their thanks are due to the Rural for the information.

2d, The letter from Mr. Wilder here quoted, and containing the statement about Mr. Downing, was not written to the editor of "The Rural New-Yorker," and, unless the Rural obtained the letter in some extraordinary way, we must believe that the whole article on strawberries is not editorial, but was written by a noted pomologist who told Mr. Wilder last year that he was delighted with the new strawberry. As he has since that time seen neither fruit nor vines of the berry in question, we are at a loss to account for his mysterious change of opinion.

3d, Will somebody inform us what are the exact pomological rules for sending out a new fruit? Are they clearly defined? and, if so, were they carefully observed in sending out the Agriculturist and Brooklyn Scarlet Strawberries, and the Iona and Adirondac Grapes?

4th, To the statement that the President Wilder Strawberry is now just as much of a humbug as it ever was, we assent cheerfully. It *is* just as much, and no more.

It is so far a humbug as to be selected by Mr. Wilder, after thirty years' persistent experiments, and after the rejection of dozens of seedlings (any one of which, if disseminated, would have made a name for its originator and for itself), as *the* plant on whose success or failure he is willing to risk all his well-earned fame.

It is so far a humbug as to be pronounced by Mr. Charles Downing "the best new kind he has seen" (and the Rural, by the way, in the very same column from which we quote, calls Mr. Downing the best pomologist in the United States) and to receive the emphatic indorsement of the Fruit Committee of the Massachusetts Horticultural Society after a critical and jealous examination of the fruit and vines in three successive years.

It has been fruited with great success this season, with a soil and treatment entirely unlike Mr. Wilder's, and has been said by one of the most skilful strawberry-growers, "as a cropper, to fully equal the Hovey as grown at Belmont."

We may add, that Belmont is the headquarters of strawberry-growing in this vicinity; that the Hovey is a great favorite there, and that five thousand boxes per acre is considered only a moderate crop.

Finally, lastly, and to conclude, there is something which looks to us very much like inconsistency in the statement that the originator of such a humbug "will live forever in *favorable* recognizance by all American horticulturists."

Pears from the South. — Well-grown Seckels were received in Boston from Norfolk, Va., Aug. 9.

The Early Rose Potato. — Among all who purchased seed of the Early Rose at the high prices it commanded when first sent out, we do not know of one who regrets his purchase; but we have heard of more than one who regrets that he had not secured more than he did.

The Philadelphia Raspberry. — We learn that a farmer in Massachusetts, who planted a considerable number of the above raspberry, and gave them no further care whatever, gathered an abundant crop, far beyond what such careless cultivation deserved. In Boston market, however, when the large, fine kinds sold readily at forty-five cents per quart at wholesale, the Philadelphia could not be sold at thirty cents so long as the better kinds lasted. When these were gone, the Philadelphias sold for twenty-five to thirty cents.

Training Raspberries. — One of the best market-cultivators near Boston finds the best method of training raspberries to be by tying them to a wire stretched horizontally and fastened to posts.

Louisiana Figs. — A large portion of the fig-crop of Louisiana has been put in jars and cans hermetically sealed, this season, for the Northern market.

California Pears. — A consignment of Bartlett pears from California arrived in New York on Wednesday, Aug. 11, and were readily picked up (their novelty no doubt enhancing their price) at fifty cents each. These pears weighed, on an average, three-quarters of a pound each: they were fully ripe, and were opened in excellent order, considering the two weeks or more they had been in transit, and also the fact, that, from Chicago eastward, they had come on as freight. They were packed in cases, a hundred in each case, well wrapped in paper, and appeared to have been gently treated in the transit.

The President Wilder Strawberry. — We copy the following from the strawberry catalogue of Louis Ritz of Plainville, O.; and would like to ask Mr. Ritz if he has seen and carefully examined the fruit of the (American) President Wilder Strawberry. If he has not, we should like to have him give us his authority for the statement his catalogue sets forth, — a statement entirely at variance with the opinion of those pomologists who for the past three years have had ample opportunity for examining the fruit of the President Wilder.

"President Wilder (new Wilder). Brilliant crimson-scarlet; flesh rosy-white; very juicy, *only firm enough for a near market;* plant hardy and vigorous; very prolific."

The Italics in the above are our own; and, until the matter is explained, we shall continue to think that Mr. Ritz has drawn largely upon his imagination.

Strawberries at Palmyra, N.Y. — The following notes on several of the most noted sorts, made at Purdy & Johnston's extensive fruit-farm, will perhaps interest our strawberry-readers, as giving the results of the experiments, mostly on a large scale, made at this place.

Wilson. — Under the best management, and with hill-culture, will average about two hundred bushels per acre, the runners being cut off during the growing season as often as once a fortnight: it is done with shears. Cultivated in strips, or according to the matted-row system, the product is nearly the same; but the berries are smaller, are sooner gone, and sell for a lower price in market, so that the value of the crop is only two-thirds that obtained from the hills.

Colfax. — This sort presents an extraordinary appearance as seen in the row, and was conspicuously observed a long distance off in the field. The plants, set fifteen inches apart, are so large, that the row somewhat resembles a hedge. The average height measured seventeen inches, and the width about two and a fourth to two and a half feet. The berries, which were yet green, were in profuse masses; seven hundred having in one instance been counted on one hill. The proprietors think it will yield at least double the Wilson, in which they are doubtless correct. It is not claimed as a market sort; the berries being only medium in size, quite soft, and of moderate flavor. Unless fully ripe, they are quite acid. This is called the "lazy man's sort," as it grows vigorously under neglected treatment. It is pistillate in appearance, but is found to have anthers enough for self-fertilization. It has been in cultivation twelve years.

Peak's Emperor, originated by Ellwood Peak of South Bend, Ind., is a cross of the Wilson and Hovey, the seed having been obtained from the berries of the latter. It resembles the Wilson in appearance, but is much larger; while in flavor it more nearly approaches the Hovey. It has been tried three years, and yields about two-thirds as much as the Wilson.

French. — This is large and handsome, bright red, regular, round, with a moderate but very pleasant flavor. It is a staminate, and quite productive. On very rich soil its growth is too rank, and it does not bear so well. The large green rows showed the vigor of its character.

Ida, a variety recommended by T. Meehan of "The Gardener's Monthly," is, next to the Colfax, the largest grower on the grounds; the average height

of the row being fifteen inches, and the breadth about or nearly two feet. The berries are medium in size, very uniform, or neither large nor small, and are quite handsome in appearance. It has been tried several years, and proves more productive than the Wilson. It is a pistillate.

Green Prolific. — A great grower, the rows conspicuous; the berries rather too soft for long shipment to market. In productiveness, it is variable, bearing less in wet seasons than in dry, as the tendency is then to run too much to leaf. The plantations last long. It grows well on all soils, poor as well as rich.

Agriculturist. — This well-known variety, famed for its variableness, and failing in so many localities, grows here with great success. In productiveness, it is about equal to the Wilson; and the masses of berries were a sight to behold. At South Bend, where the soil is lighter, it was worthless.

Nicanor does not succeed well, but had been cultivated only in the matted-row system. We have understood it always succeeds when in hills with cut runners.

Durand is a magnificent berry; but the plant is quite weak. It has not been long enough cultivated to know its degree of productiveness.

Rippowam is a poor bearer, and of little or no value.

Jucunda. — This variable sort succeeds well on these grounds; and the berries are of the great size, and possess the same rich, glossy, golden appearance, as on the grounds of Knox at Pittsburg. It is quite productive *in hills.*

Triomphe de Gand yields about one-half as much as the Wilson; and, selling high in market, is profitable. At South Bend, it yielded scarcely a berry to the plant.

Napoleon III. is a fine large berry, and promises well

Dr. Nicaise proves an entire failure.

Feast's Fillmore is a strong upright grower, medium for hardiness. Like Jucunda, it does not succeed on all soils.

Barnes's Mammoth (from Poughkeepsie) gave high promise last year for productiveness, good quality, great size, and general value. This year, it has not borne well; a result which may perhaps be attributed to a heavy accidental flooding of the plantation.

Romeyn's Seedling is thought to be identical with Triomphe de Gand. On tasting the berries of the two kinds, we could perceive no difference; nor could any be seen on close examination. The plants were obtained from headquarters.

Golden Queen, generally supposed to be identical with Trollope's Victoria, is believed by Purdy & Johnston to be distinct; for although they resemble each other so closely as to be scarcely distinguished on the table, if at all, they found at South Bend that the Golden Queen far exceeded the Trollope in productiveness.

Lennig's White, fine and valuable.

On inquiring for a list of the best market-sorts, we were told, that, on account of the variable character of many, no list could be made suited to all localities; but on this soil, which is an admirable light loam, the Wilson, Triomphe de Gand, and Agriculturist were perhaps the best three, while some others were scarcely inferior. In other places, the two last named would be worthless. The Wilson appears to be the only sort valuable everywhere. — *Country Gentleman.*

To the Editor of "The Journal of Horticulture."

VERY few strawberries are cultivated in this vicinity, from the fact, perhaps, that wild strawberries are very abundant. These wild strawberries are large often, and of excellent flavor. I wish to inquire of "The Journal of Horticulture" if the wild strawberry cannot be cultivated, thereby increasing its size, and retain its flavor.

Much attention has been given, of late, to the cultivation and improvement of small fruits, which every household that owns but a few square rods of land, unencumbered by buildings, may possess and enjoy almost as soon as planted. As the enemies upon the apple, pear, peach, and plum increase, we may comfort ourselves that strawberries, raspberries, and blackberries are left us; and, more important than either of these, currants, though the currant-worm is becoming a pesky nuisance in some places. But I am inclined to think they can be easily checked if taken in season. Those who have not tried it are not aware what a capacity the common red and white currants have for fruiting under good cultivation.

One great value of the currant is, that it hangs well on the bushes, and continues for a long time to furnish the household with one of the best fruits of midsummer. *A. B. B.*

PITTSFIELD, N.H., Aug. 10, 1869.

[Our answer to the inquiry in regard to the improvement of the wild strawberry by cultivation is, that it has been done; and not only that, but finer varieties have been raised from seed; the Scarlet strawberries, including the Jenny Lind and Large Early Scarlet or Early Virginia, being improved varieties of the wild strawberry. As to the alleged superiority of the flavor of the wild strawberry, our ideas agree exactly with those of the following paragraph from "The Country Gentleman."—*Ed.*]

"*The Wild Strawberry.*—It was once not uncommon to hear the remark, that the wild native strawberry, formerly so abundant, exceeded in flavor any of the new and improved varieties; and some still utter with regret, as over past joys, 'I never expect to eat such delicious berries as we had in childhood, when we gathered them wild in the fields.' The exercise and fresh air of long rambles in search of the berries sharpened an already keen appetite, and gave additional zest to the relish imparted to hard-earned delicacies. We lately had an opportunity of collecting wild strawberries from one of the remaining wild localities; and the conclusion was, on comparing them with the larger cultivated sorts, that they bore about the same relation to them that the Black Mazzard Cherry does to the Black Tartarian, Elton, and Mayduke. The wild strawberry, compared with the Triomphe de Gand, or even with the Scarlet, is small, acid, and seedy, but, like the Mazzard Cherry, becomes much better when fully ripe. If it were a newly-introduced sort, it would be thrust out without ceremony from the company of the larger, milder, and more fleshy improved varieties. To show the high flavor imparted by hunger, we may, as an example, cite the case of the 'delicious' wild grape discovered many years since in the Far West by some of the men attached to Long's Expedition: they had never tasted any thing equal to it among the finest exotics. It was brought and cultivated in a

few gardens at the East, where we had an opportunity of testing its wonderful flavor, and found it as sour, austere, and astringent as could well be imagined. It is safest, in deciding quality and flavor, to taste along with some well-known standard, before pronouncing with confidence."

Grape-Notes in Midsummer.—Vines, generally, in my small collection, are looking well. The average time of blossoming was a week earlier than last year. The rose-bugs were very plenty this season, and the result of their visit is seen in numerous ragged clusters.

The To Kalon vine seems to be noted for a greater readiness to mildew than any other kind. Every year, by the middle of August, leaves and fruit are one mass of mildew; and this season, early in July, when all other vines are perfectly free from any spots or signs of mildew, the leaves of the To Kalon were perfectly white on the lower side.

Rogers's 15 with me is showing magnificent bunches. This is the first time I have had decent clusters, and I find the secret of success to consist in not pruning close. Seven or eight good buds must be left in the fall on each fruiting cane.

Let all cultivators who have had poor, ragged clusters heretofore, remember this, next autumn.

The bunches of the Iona seem to be very long and loose this year; the vine itself perfectly healthy.

I observe on a four-year-old Creveling *five* bunches from one eye, with a lateral from the lower eye carrying another bunch. I think I have never noticed more than four hitherto on any out-door kind.

The Cynthiana and Herman vines in pots are making tolerable growth, and are very healthy. The wood of the latter is very short-jointed.

Delawares that have hardly grown an inch for several years are growing vigorously this season, and are perfectly free from mildew.

I noticed a three-year-old Martha the other day carrying forty handsome clusters. *J. M. M., Jun.*

Aug. 1, 1869.

The Peach-Crop in Delaware. — We have an immense crop of peaches in our country this season. I am afraid there is ample to glut Baltimore, Philadelphia, New-York, and Boston markets. There never has been such a crop in Delaware and Maryland. Railroads, steamboats, tugs, sailing-vessels, and barges are taxed to their full capacity carrying peaches. I shall have five to eight hundred bushels of Bartlett pears to ship in a week or ten days from now. Yours truly, *Randolph Peters.*

Wilmington, Del., Aug. 12, 1869.

A Warning to Beggars. — A gentleman at Winchester (Eng.) has placed this notice in front of his rockery of ferns: "Beggars, beware! scolopendriums and polypodiums set here!" It is said that the beggars keep at a respectful distance, though its effect would fail if the beggars were unable to read.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

New Plants. — *Thapsia decipiens*, *Madeiran Thapsia* (Bot. Mag., t. 5670). — Umbelliferæ. A remarkable palm-like umbellifer, met with in rocky gorges in the Island of Madeira. In habit and foliage it is extremely elegant, and well worthy the attention of cultivators who are interested in the development of the "sub-tropical garden."

Erodium macradenium, Spotted-flowered Storksbill (Bot. Mag., t. 5665). —

COBÆA PENDULIFLORA.

A charming little hardy geranium, quite rare and unique. Native of the Pyrenees. Introduced by Messrs. Backhouse & Son. The leaves are one to two inches long; the flowers three-quarters of an inch in diameter; the color purple, with dark spots.

Cobæa penduliflora, Pendulous-flowered Cobæa (Bot. Mag., t. 5757). — A singular and graceful climber, quite unlike the common cobæa of our greenhouses; the chief difference being in its immensely long corolla tubes, and the projection of the stamens, which form five rays, as in gloriosa. Dr. Hooker

supposes the arrangement of the stamens "intended to secure cross-impregna-

THAPSIA DECIPIENS.

ERODIUM MACRADENIUM.

tion by removing the anthers to the farthest distance from the stigma."—*Fl. Wd.*

Allamanda nobilis (L'Illust. Hort., t. 588; Bot. Mag., t. 5764). —This splendid allamanda takes our attention away from the absurd dispute on the Wardleiana difficulty; for it is the finest of the series of plants to which it belongs, eclipsing them alike in the majesty of its flowers, the larger size and fuller green of the leaves, and freer habit of growing and flowering. Mr. Bull has never imported a more valuable plant, nor, perhaps, one that will be seen more frequently than this in first-class competitions. Dr. Hooker says, "As a horticultural acquisition, it differs from all the allamandas which come nearest to it in general characters."

Griffinia Blumenavi (L'Illust. Hort., t. 589). — A beautiful amaryllid, native of Brazil. The flowers are formed in a scape: they are of a delicate blush-white color, striped with purplish rose.

Cupressus macrocarpa foliis variegatis (L'Illust. Hort., t. 587). — Unfortunately, this figure is not colored; but the tints show a plant largely splashed with white or creamy variegation. Because of the likelihood of its becoming a valuable lawn-tree, — *C. macrocarpa* in its normal form being one of the noblest of its class, — we give it a place here. The variety *foliis variegatis* is of English origin, but has passed into the possession of M. Aug. Van Geert of Ghent.

Azalea linearifolia (Bot. Mag., t. 5769). — A remarkable species of azalea from Japan, distinguished by its long linear leaves and flowers, consisting of long linear petals, which are free to the base, with stamens set on extra long filaments. The color of the flowers is a pleasing rosy pink.

Eranthemum Andersoni (Bot. Mag., t. 5771). — A splendid half-shrubby stove-plant, introduced by Mr. Bull. The flowers are borne in a crowded spike, and in appearance suggest a splendid assemblage of butterflies.

Calceolaria Henrici (Bot. Mag., t. 5772). — A beautiful Andean species, with bright yellow flowers and large lanceolate leaves; nearly hardy; in character most nearly resembling *C. hyssopifolia.* Introduced by I. A. Henry, Esq., of Edinburgh.

ABUTILON THOMPSONI.

Abutilon Thompsoni. — This splendid plant, introduced by Messrs. Veitch & Sons. appears to be without a history. That, perhaps, matters but little. It is a valuable acquisition, on account of its rich variegation; but the leaves are so elegantly formed, that, if it had not this great recommendation, it would be ac-

ceptable, especially as, when mature in growth, it will afford welcome flowers ; for it is a sport from *A. striatum.* It is a free-growing, nearly hardy shrub, the leaves three times lobed, the central lobe the longest, the two side lobes having sub-lobes near the base. The variegation consists of blotches, veins, and spots of clear lemon-yellow, sulphur, and cream-color, on a ground of bright grass-green.

Cordia glabra (Bot. Mag., t. 5774). — A noble stove-shrub, native of Brazil. It may be likened in leafage to a rhododendron, and in flowers to a smallish ipomœa ; of the purest white. — *Gardener's Magazine.*

Pure Seeds. — A calendar of farm operations in March begins thus : "It is of importance that we sow only those seeds which we want to grow, and that they be alive when we sow them." To the other conditions of success in plant-growing, viz., the preparation of the bed for these seeds, and their proper position on and under its surface, we do not now refer. It is with their purity and vitality that we have now to do.

No one has done more than Prof. Buckman to awaken the attention of farmers to the importance of this subject. He has shown them how they suffer from both carelessness and roguery in the seed-trade. How often has he not reported from ten thousand to fifty thousand weed-seeds in a single pint of clover ; in a pint of rye-grass seed several thousand seeds of crowfoot and of holcus, and in a pint of linseed ten thousand to fifteen thousand seeds of charlock, mustard, cress, &c. He has taught us also, by careful analyses, not only of seeds, but of pasture lands, how this mass of weeds is not only sown, but grown. Ten years ago, in a field of "seeds" at Cirencester, he dug up a square yard of clover-ground, and found forty-six plants on it neither rye-grass nor clovers, which alone the farmer believed he had sown. There were seven plants of plantain, eight of crowfoot, two hardheads, two dandelions, one hawkbit, six of ground-ivy, four of self heal, one small bindweed, one fool's-parsley, two mouse-ear, six field-madder, two of couch, four of creeping bent. Several of these are flat-growing weeds, occupying the surface ; such are bindweed, plantains, crowfoot, dandelion, &c. Many of them are strong-rooted, and some of them creeping-rooted plants, robbing the substance of the soil ; such are couch, hardheads, crowfoot, &c. All of them are interlopers, displacing useful plants whose seed nominally alone was sown, and whose growth alone was desired. How came they there ? In the seed box when the field was sown, the seeds (nominally clover-seed and rye-grass) with which it was filled were not "only of the kinds desired," and probably many of them were dead. The farmer does indeed himself sow most of his weed pests, and they come up with his sown crops. Take the case of the clover crop : each weed-seed sown, first, subtracts from the sum of the clover-seeds in the measure ; second, very many of the weeds grow so fast as to smother and kill many of the clovers in their neighborhood ; and then, third, many of these weeds, seeding in the first year, are succeeded in the following year by an immense increase. These three circumstances, says Prof. Buckman, are often of themselves enough to account for so-called clover-sickness.

In the case of the turnip, again, the farmer suffers by the admixture of char-

lock, bought at two shillings and sixpence a bushel, to mix with the turnip-seed for which he pays ninepence to a shilling a pound. And not only home-grown but foreign rubbish, Indian rape, and other similar seeds, first killed, are offered in large quantities to the trade for mixing with turnip-seed.

Farmers themselves often grow and sell foul seed, and thus suffer for their own or their neighbors' carelessness. And as there are rogues in all trades and occupations, so in the seed-trade there is an annual manufacture of dead seed for the dilution of that which is alive, so as to produce a marketable compound which can be sold at an extra profit.

Although it is known that there is injury of this kind from which the plant-grower suffers, yet it is by no means desired to imply that the seed-trade generally is tainted in this way. On the contrary, seed-sellers suffer as well as their customers. It is impossible, except when a man sows only seeds which he has himself grown, to avoid the risk of disposing of a worthless article. Any one who buys, whether wholesale or retail, may suffer. And we are glad, in the interest both of the farmer and the seedsman, that many of the leading men in the trade have joined to urge the passing of a law which shall inflict penalties on wrong-doers in this particular department of rascaldom. The bill which it is intended to introduce enacts, that, —

"Whoever shall destroy or kill, or cause to be destroyed or killed, by any process of steaming, scalding, kiln-drying, baking, fumigating, or other artificial means of any kind, the vitality or germinating power or principle of any seeds, or shall give or impart, or cause to be given or imparted, to any seeds of any kind, by any process of coloring, dyeing, sulphur-smoking, or any other artificial means, the appearance or likeness of any seeds of any other kind, or a false or deceptive appearance, shall be guilty of an offence against this act, and shall for every such offence, on summary conviction thereof before the court, be liable to, and shall forfeit and pay, such penalty and costs as hereinafter in that behalf provided."

Selling, or possessing for sale, dead or artificial seed, and selling mixed seeds as neat, are also declared to be offences under the act.

It is proposed that the penalties for offences under the act be as follows: —

"First offence, fifty pounds and costs; second offence, fifty pounds and costs; and the offender's name, occupation, place of abode, and place of business, and particulars of his convictions and punishments under this act, to be published by the informant or prosecutor, and at the expense of such offender, in such newspaper or newspapers, or in such other manner, as the court shall think fit to prescribe; the informant or prosecutor to be allowed as part of his costs such sum of money, not exceeding five pounds, as to the court shall seem a reasonable sum."

We cannot doubt that good agricultural service will be done by the strict execution of some such enactment as this; and it will be a capital point if such penalties shall be enacted by the resolute urgency of the leading men in the seed-trade. — *Gardener's Chronicle.*

Garden Thorns. — There are upwards of a hundred and fifty species and varieties of "thorns" in cultivation, and amongst them all, not one can be specified as undesirable, where room can be found for it, and the scene is not unfit. Nevertheless, thorns, that is to say, species and varieties of the genus *Cratægus*, may be very fairly arranged in two groups, one of which we should regard as more especially adapted for large spaces, drives, and the margins of woods and shrubberies, and should designate "park thorns;" and the other group, being better adapted for contracted spaces and highly-embellished scenes, we should distinguish as "garden thorns." Without respect to any such classification, it is certain that the genus *Cratægus* offers us a remarkable number of beautiful trees of comparatively small growth, whether for the park or the garden, and is the richest in variety of any family of ornamental trees whatever. If distinct examples of such as we regard as park and garden trees are required, we would instance the common hawthorn for the first class, and the double-flowering thorn for the second. The case might be put in a more striking manner, by selecting for the park the handsome, large-leaved, vigorous-growing cockspur thorn (*C. crus-galli*), and for the garden the elegant yellow-berried, tansy-leaved thorn (*C. tanacetifolia*). To be sure, it is not necessary to institute any such classification at all; but as this is the season for planting ornamental trees, we may render some service to our readers by offering a few remarks on the characters of thorns, and a list of the species and varieties that are best adapted for planting in gardens.

The accepted type of the family, the common hawthorn (*C. oxycantha*), is always beautiful, save and except when, in the height of summer, we sometimes find it almost leafless, and covered with the dirty cocoons of myriads of caterpillars. It is one of the first trees assailed when the weather is favorable to vermin, and that is, at least, one reason why it is not well to plant it in the vicinity of highly-finished garden-scenes. But in truth the hawthorn requires a great space for its complete development; and, considered as an ornamental tree, we need to see it when long years have bowed its head to the ground, and it acquires the grim hunchback character to which the term "creeping thorn" is applied. In old parks and woods, the creeping thorns are sometimes the most interesting and attractive features of the place. If we cannot find such in our rambles in the month of May, we will be content to admire the snowy purity, and rejoice in the spicy perfume, of an old thorn-hedgerow, where the beauty of the trees is the result of their assemblage in long waving lines, that give the roads and lanes they enclose glorious fringes of gauzy "may."

Between single-flowering and double-flowering thorns there is a difference that must be noted when selections are made for ornamental planting. The single-flowering varieties are more richly perfumed than the double, and they produce abundance of berries in the autumn; whereas the double-flowering kinds produce none, or so few as to afford no display of autumnal color. But look at the old thorns now, or call to mind how they have glowed in the landscape since the beginning of August, and rest satisfied that to obtain thorns with double flowers is not quite so grand a feat as at first consideration of the case it may appear. The varieties of *C. oxycantha* have just one decided advantage over the species,

that they are not so much disfigured by caterpillars as the species; and, as for any other advantage in respect to their employment in gardens, we may as well reckon their less robust growth in their favor.

Thorns will grow in almost any soil and situation. On chalk and gravel they thrive, if there is some depth of earth. On clay they grow vigorously, provided the land is well drained; and, in common with all other trees, a fertile, mellow loam suits them admirably, and only in such a soil can they be said to attain perfection as timber-trees. In any and every case thorns require free exposure; they will not long live in the shade and drip of other and larger trees. The vigorous berry-bearing kinds may be propagated from seeds, which usually vegetate the first season after sowing, if sown in autumn; though some remain in the ground a whole year or more before they start. But the double-flowering and delicate-habited kinds are commonly grafted on the hawthorn; and this system enables the cultivators to produce fine specimens quickly, and of any height up to eight or ten feet. No ornamental tree is more obedient to the pruning-knife; for, if spurred close in, they form close, compact heads, and flower freely. The small-leaved kinds, however, bear hard pruning best; but unless there are special reasons for forming the head to a certain shape, it is better not to prune at all; then the tree acquires a free, graceful aspect, and some of the varieties of pendant habit "weep" to the ground.

Cratægus oxycantha, the common "white thorn," "hawthorn," or "may," is well known for its summer bloom and autumn berries. In the green glades of a well-wooded park, a few ancient thorns are always objects of interest; the best garden varieties are the following: —

C. o. multiplex, the double white-flowered; one of the most effective white-flowering trees of its season, and a charming thing when well grown in a pot, in the form of a small bush, for the conservatory.

C. o. punicea, single scarlet-flowered. The flowers are exceedingly rich in color, and they emit a delightful fragrance. In autumn the tree is loaded with berries.

C. o. rosea superba, single rose-flowered; a charming tree for the garden, or to flower as a dwarf pot-tree in the conservatory.

C. o. rosea flore-pleno, double pink-flowered. A single sprig of its flowers is like a bouquet; the color bright and cheerful. It is not very fragrant, and rarely produces berries.

C. o. floribus coccineus plenis, double-flowering scarlet. The color is not a true scarlet, but rather a deep pinkish red, remarkably effective when seen in a mass, supported as it is by an abundant bright green leafage. This splendid thorn was first presented to public notice at the International Horticultural Exhibition of 1866, where it was at once pronounced a valuable acquisition to our collections of hardy flowering trees. The variety first originated as a "sport" in the garden of Mr. Boyd of Waltham Cross. It was again exhibited at the early summer shows at Regent's Park in 1867 and 1868, by Messrs. Paul & Son, of Cheshunt.

C. Mexicana, the Mexican thorn, is an evergreen species of most elegant habit and free growth, which soon proves an effective specimen on a lawn. The

flowers are white, the fruit yellowish : requires plenty of room for full development.

C. lobata pendula, a fast free-growing tree of elegant pendulous outline ; the leaves are unequally lobed, the flowers are white, and produced in loose corymbs. Requires plenty of room for full development.

C. o. pendula nova, a new "weeping" variety of hawthorn of extremely elegant habit ; admirably adapted for a spacious lawn, or for a good open position in the arboretum.

C. pyracantha, one of the finest of all evergreen wall-trees, and rather scarce. Once seen in autumn, with its huge bunches of scarlet-orange berries contrasting finely against its dark-green leaves, it can never be forgotten. Why we should so seldom meet with this tree, both in gardens and nurseries, is to us a mystery. It cannot be that there is any difficulty in propagating it, because it may be raised from seed with certainty, and also from cuttings taken at the end of July, and kept close in a pit or frame for six months. We have grown this thorn largely in pots, the trees being moderately shortened back with the knife in autumn, and kept to about three feet in height. In autumn they are covered with berries, and are employed with skimmias, &c., in the plunging system, where they light up the front lines of evergreen shrubs until the spring flowers begin again.

C. tanacetifolia, the tansy-leaved thorn ; a fine free-growing tree with deeply-cut leaves, white flowers, and yellow berries.

Less to be regarded as garden trees, yet deserving the first consideration of the planter desirous of enriching the front lines of the shrubbery, and the knolls and slopes of the home park, are such as *C. crus-galli* and its several varieties, bearing large berries, and presenting splendid leaf colors in autumn ; *C. Layii*, one of the largest leaved and most distinct of thorns ; *C. aronia*, bearing abundance of yellow fruit. A dozen more might be added, but we have named enough for the foundation of a collection. — *S. H., in Floral World.*

Habrothamnus elegans. — A true greenhouse evergreen plant, native of Mexico, introduced in 1844. "Flowers in the first month," says Paxton : he should have said in all twelve ; for, if placed in the right position, there is not a day in the year but you may find good flowers on this plant. That position is against a pillar in a conservatory, where it can run up to its full height ; and its fat shoots, that keep bursting up so determinedly when the plant is cramped in pots or cut in too much in any position, satisfy themselves, and break out into gracefully-pendant shoots that hang down, tipped with rich bunches of carmine flowers, good "for cutting" and embellishment of most kinds. It is not the least fastidious about soil, and will grow "anywhere" in a conservatory ; best suited, however, for large ones, where it may not be necessary to cut in the free-flowering growth that spreads so widely round a pillar. It is one of those plants that might be the better for removal and replanting after four or five years' work, as it then might get exhausted ; which is not the case with the plumbago. Other species may be as good, or better, and are worth trying in this way. — *Floral World.*

CANTUA DEPENDENS. — Is not marked as a climber in the catalogues, but that is the best way to grow it. Put it against the back wall of a greenhouse, and try it. At the Marquis of Westminster's, Eaton Hall, there is a magnificent plant of *Lapageria rosea*, planted against a back wall, and spreading about in all directions. It is planted in moist, rich loam, in a border a little below the level of the pathway; and though Mr. Collinson sometimes counts five hundred flowers on his *Lapageria* at one time, he has a plant growing next it, in the same border, and under the same conditions, which he values as highly: and that is *Cantua dependens*. It does not flower continuously, as the noble *Lapageria* may be said to do; but then the splendid spikes of flowers which it yields in the early part of the season compensate for that. — *Floral World.*

ON PÆONIES. — The herbaceous and tree pæonies of China are well known to rank amongst the most ornamental plants which have found a place in our gardens. Their large flowers, disposed in elegant disorder, or with graceful regularity, assume the most varied colors, and are appreciated not only by florists, but also by artists, who produce them in their ornamental designs. The plants are, moreover, very hardy, and they have an indefinite longevity.

The tree-pæonies thrive in peat-earth, either pure, or mixed with fertilizing substances; and generally in any sweet, porous garden-earth rendered fertile by well-decayed manure. They commence growing so early in spring, that the first shoots and flower-buds are sometimes destroyed by frosts, if not protected. Nevertheless, they generally develop themselves, in spite of such accidents, from the lower eyes, which give fresh flowers; and in all cases the plants themselves are not affected in respect to their vitality. Some persons cultivate tree-pæonies in conservatories, in prepared earth, which is renewed from time to time; and, thus sheltered from all hurtful atmospheric influences, they develop in perfection their splendid flowers, the duration of which is prolonged by means of shading.

The herbaceous pæonies succeed in nearly all soils having sufficient depth for their strong roots. They have the advantage of flowering after the tree-pæonies, so that the flowering season may be prolonged from the beginning of May to the end of June.

All pæonies love water, and principally the herbaceous sorts, which ought not to lack it, not only from the moment when the flower-buds commence to form, till they have perfected their flowers, but also from the beginning of August, continuing until the rains of autumn, to favor the production, at the base of the stem, of strong eyes, capable of yielding vigorous flowers in the following season. To secure the flowering of pæonies in full perfection, it is essential to place them in very open positions, but where they may not receive the sun during the hottest part of the day.

When masses of the herbaceous pæonies have become strong, and the ground has been exhausted by them, it is indispensable to take them up, and separate them, preserving for planting portions having two or three strong roots, and the eyes well fed, and then to change their position. This operation should take place every six, eight, or ten years. As a general rule, when the flowers become

few, and diminish in size, the roots should be transferred to fresh soil. In the case of certain varieties, it is beneficial, when the young stems are rising in spring, to take away the weakest, leaving only those which are more vigorous.

The multiplication of Chinese pæonies is easy. All of them may be increased by division. However, as the tree varieties grow slowly, and one would have to wait many years for the tufts to be strong enough to be divided, it is found better to propagate these by grafting. To this end, strong roots of herbaceous varieties are procured: these are kept growing, and then grafted, a branch with one or more buds being inserted upon the side of the root. The grafted roots are put under bell-glasses or in frames, placed by preference in a north aspect, and the grafts soon become united, and commence to grow promptly, producing roots for themselves. The grafting is performed from the middle of July to the middle of September.

Few raisers of seedlings take this genus in hand, because it requires so much space to grow the large number it is necessary to plant out in order to have a fair prospect of gaining some remarkable novelties; and it is, besides, necessary to wait for their flowering for seven, nine, or ten years, and even more, in the case of the tree-pæonies. However, MM. Guérin-Modeste, Verdier Père, Mathieu, and Lémon of Paris, Thomas of St. Denis, Hiss of Versailles, Callot of Douai, Parmentier of Enghien, and several others, among whom the Italian growers must be especially mentioned, have obtained many new tree-pæonies, as well as herbaceous varieties, magnificent sorts not yet distributed. To these must be added those introduced direct from China by Mr. Fortune. Several of these varieties of tree-pæonies remain, as yet, without equal in respect to the regularity of their form and the beauty of their colors. — *M. Rouillard, in Floral World.*

Mandevilla suaveolens. — A well-known first-class climber; sweet, white, and beautiful; free to grow and to produce its flowers, but very liable to green fly. It will run up a back wall, and cling to rods or wires freely; and if trained to a rod overhead, from which its shoots can swing, so much the better. It is well suited for large conservatory or moderate-sized greenhouse. — *Floral World.*

Polyanthus narcissus. — If very fine bulbs, these should be grown singly; otherwise a better effect is produced by growing two or three together. There is no very great difference in the colors, but some are much better than others. The following are some of the best: Bazelman Major, white, with yellow cup; Florence Nightingale, white and yellow; Grand Monarque, white, citron cup; Grand Soleil d'Or, yellow, orange cup; Newton, yellow; Perle Blanche, pure white; Queen of the Netherlands, white, citron cup; States General, citron, yellow cup.

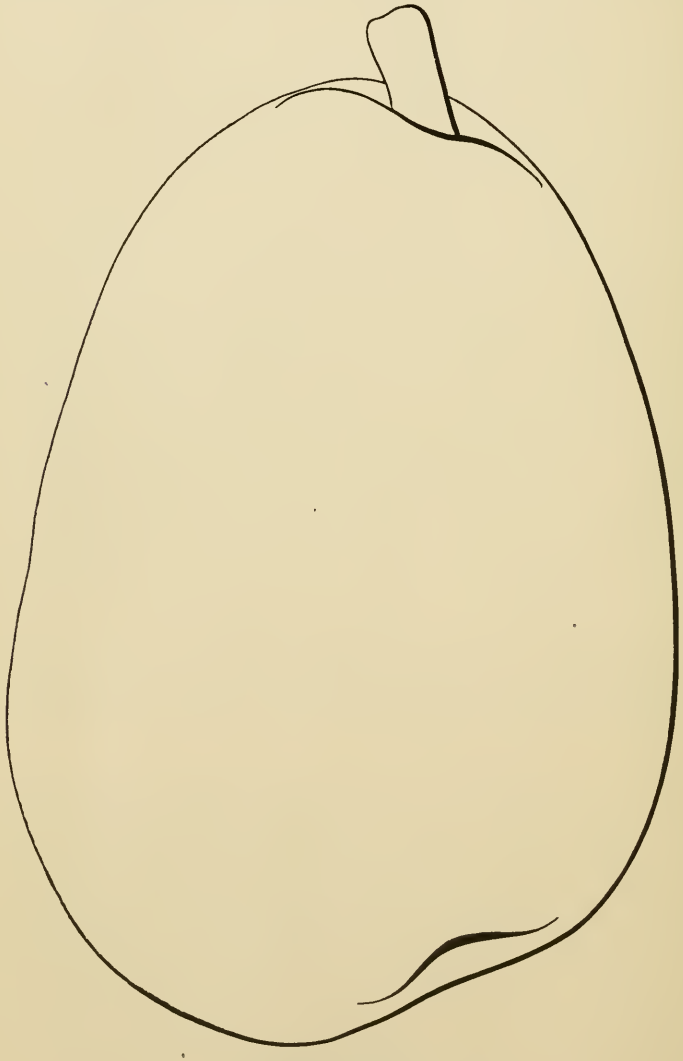
A Costly Luxury. — English papers assert, that, in December last, there was exhibited at Covent-Garden Market, London, a basket of twelve magnificent pears, the price of which was eighteen guineas, or about ninety dollars in gold! The name of the variety is not given.

PLUMBAGO CAPENSIS. — What is the most beautiful greenhouse climber in flower in October? *Plumbago capensis*, undoubtedly; and it is one of the very best plants ever introduced or ever seen in this country for training up the pillar of a conservatory, and then, if you like, running from pillar to post, at about eight feet from the ground. Suppose the case of one of that large class of gardeners that have to prepare gardens and greenhouse and conservatory for an autumnal show, when the great people go in the country after the London season. It is just possible he may have a lot of rambling, but dirty-looking and flowerless creepers in his conservatory, which, combined with the general want of autumnal attractions there, will make visitors keep clear of it for the out-door display; but a good plant of this plumbago will light it up with a beauty, about the end of September and beginning of October, which cannot be surpassed by that of any other plant in flower at the time, either in doors or out. It is possessed of every quality which a good greenhouse climber should have, — shoots that hang freely down, tipped with a truss of pure but delicately blue flowers; freedom from dirt or insects of any kind (this is of the greatest advantage in a greenhouse climber); freedom of growth and bloom in almost any soil in greenhouse or conservatory. Of course, you have seen it grown in pots, generally badly, but sometimes well; but that is a very contracted way of growing a thing with a soul above even a No. 2 pot; and if you once see it in flower against pillars, &c., in a conservatory or large greenhouse, you are not likely to try it again in a pot if you have any alternative. As regards the soil, watering, &c., a word need not be said. We once thought a dry conservatory border, in which the plant could ripen its wood well, the correct thing, but have, since then, seen it growing and flowering even much better from the moist, gravelly soil of a conservatory; and the soil and conditions that will suit the commonest and hardiest greenhouse climber will suit it. Of course it must be pruned in close every winter, and that is about the only work necessary after planting; and, once the plant is grown and tied over the space you intend it to cover, that interloosing and triweekly cutting-out necessary with *Cobæa*, *Passiflora*, *Tacsonia*, &c., is fortunately never required. — *Floral World.*

AGAPANTHUS UMBELLATUS. — It is not generally known that this plant may be wintered in any place where it can obtain a moderate amount of light, and be kept free from frost. I keep a couple of dozen large plants through the winter months in a place originally intended for a laundry, in which I can keep a fire during frosty weather. The plants are placed on a rough stage raised in front of the window. I stand them out of doors in a sheltered place in April or May, if the weather is favorable. The treatment they receive naturally causes them to bloom late, and they come in at the time they are most wanted. As to soil, I generally pot mine in two parts loam, one part rather rotten dung, with the addition of a little leaf-soil and sand. I reduce them in the spring of every other year, to keep them to a serviceable size, to effect which it is necessary to pull them to pieces; and I find they do not bloom so freely that year as the following: therefore it is best to do a part one year, and part the next. — *J. S., in Floral World.*

Poire de l'Assomption. — The following description and outline of this new pear, which, from its large size and early maturity, has created much excitement in Europe, are from the "Flore des Serres:" —

"This beautiful and excellent pear originated on the estate of M. Rouille de



POIRE DE L'ASSOMPTION.

Beauchamps, near Nantes. It was exhibited before the Horticultural Society of Paris in 1864 and the three following years. In 1867, the committee of pomolo-

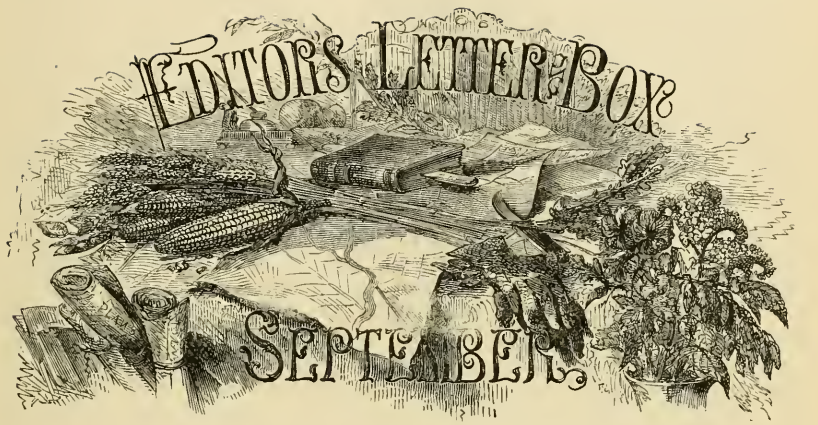
gy reported on it as follows: 'We see here a remarkable fruit in many respects: by its early maturity, it enables us to await patiently the other fine pears which close the season of summer fruits, and open that of autumn; by its size, it clearly takes place in the first rank of summer pears, which it surpasses in this respect; by its quality, it would seem that it ought easily to compete with them; adding this further advantage, that it keeps several days without rotting, awaiting the requirements of the consumer.'

"The flesh is half-fine, melting, juicy, sugary, and well flavored. It ripens from the end of July to the end of August. The tree forms very fine pyramids; the wood is strong, and very vigorous. The fruit has much analogy with that of the Colmar d'Aremberg; and still more with the Bartlett, which it surpasses in size. The grafts and buds on free stocks or quince have pushed with remarkable vigor, and permit us to expect some very fine trees."

Bedding-Plants. — From my experience, I can confirm "Quo's" notes respecting the Pyrethrum Golden Feather as a bedder, and its being not so free blooming when grown from seed; also respecting Pelargonium Crystal Palace Gem being an "effective and durable bedder." I would add a word respecting one or two other things which I have found good. Pelargoniums come first; and, amongst the golden tricolors, Louisa Smith has a first place. Mrs. Pollock is an old favorite, and is cheap, and must be grown either for auld lang syne or its cheapness, which is the powerful consideration with the multitude; but I am confident, that, when Louisa Smith is seen growing with Mrs. Pollock, it will be found quite as good a "doer." At Reading, where I saw it in one place, it was doing much better; both being planted out together. I also saw it near Weymouth, where it was splendid, having grown into a large plant; and indeed, wherever I have seen it, the opinion seems to be that it is quite as good a grower as, and much brighter in color than, the older sort: the leaf is also a finer shape, being rounder; and the green does not run so much outside the zone. I am informed by those who have seen it (I have not) planted out at its home, the Dulwich Nurseries, that it is very fine there also. Lady Cullum is a first-rate grower, and very distinct, but not sufficiently effective for bedding out: the zone is all, or nearly all, quite black; and the margin is so narrow, that it has no effect. Among common zonal varieties, Glorious (rich, deep vermilion-scarlet), Rebecca (cherry), and Vesuvius (bright scarlet with a white eye) are worthy of every praise; habit, flowers, truss, and profuseness of bloom, are unsurpassed: perfect balls of bloom all the season. Tropæolum (Mrs. Treadwell) is unique as a bedder, the flowers such a rich crimson, the leaves such a dark green, and so profuse; moreover, a fine winter bloomer. For the few who can afford it, *Achyrocline Saundersonii* (E. G. Henderson & Son) will be a valuable acquisition amongst white-foliaged plants, being of a beautiful silvery tint, and exquisite in habit, and, moreover, useful all the year round. In the same way is *Artemisia Stelleriana*, first-rate for bedding, and perfectly hardy. From what I have seen of all the above, I am sure they will give every satisfaction as bedders if they only get a fair field and no favor. Favor has given not a few things a bad name, and nearly killed Mrs. Pollock: fair play is all they want. — *Alexander*, 29 *Union Road, Cambridge, in Gardener's Chronicle.*

Spiræa Palmata. — We are indebted to Mr. Fortune for the following account, read at the last Tuesday meeting of the Royal Horticultural Society, of the beautiful and hardy *Spiræa palmata*, which was described by Thunberg in his "Flora Japonica" nearly a hundred years ago (1784): There is a plant of this name in our gardens; but it is very inferior to that exhibited by Mr. Noble, and which is, no doubt, the true *S. palmata* of Thunberg. The plant is found cultivated in almost every garden in the more northern parts of the Japanese empire, and is a most beautiful object when in full bloom. Dr. Hooker, who has figured it in "The Botanical Magazine," describes it as "by far the handsomest of the species of the genus hitherto imported, and certainly one of the most beautiful hardy plants in cultivation. The deep purple-red of the stems and branches, passing into the crimson-purple of the glorious broad corymbs of flowers, contrasts most exquisitely with the foliage, which in autumn assumes beautiful tints of brown and golden-yellow." Like all the Japanese plants cultivated in or indigenous to the more northerly parts of the empire, *S. palmata* is perfectly hardy in England, and will form a valuable addition to our list of hardy herbaceous plants. The East has already favored us with some herbaceous plants of great beauty, such, for example, as *Anemone japonica* and *Dielytra spectabilis;* and the *Spiræa* now exhibited will prove a fitting companion to these beautiful and useful species. — *Gardener's Chronicle*

Influence of Stock upon Scion. — Seeing in your valuable paper a discussion going on in reference to the influence of scion upon stock, and stock upon scion, I venture to give you a description of a Marie Louise Pear I have growing in my grounds. The tree I refer to has been grafted two years last March. The first season, the tree assumed the form of a weeping-ash; and the two main shoots attained the length of two feet and a half, the three minor shoots about two feet. Last season, the shoots did not lengthen more than six to nine inches, the two-years' wood becoming covered with fruit-buds. The shoots were shortened in the pruning season, — No. 1 to about twenty inches, eleven pears; 2, to fifteen inches, twenty pears; 3, to eighteen inches, nineteen pears; 4, to twelve inches, nine pears; 5, to fifteen inches, twenty pears; number of fruits, seventy-nine. The above are all set and healthy in appearance; which, for a two-years' graft of Marie Louise, is, to say the least, unusual, as I have not met with a similar instance during thirty years' experience. The stock is a seedling pear, or what is usually termed a free stock, worked standard-high: others grafted from the same tree are different in appearance, and have grown freely; but there is no fruit on them, as a rule. The Marie Louise sets badly with me on trees five times the age; and I have no hesitation in saying that a Marie Louise tree which has been planted these ten years has not set seventy-nine pears during the time. The conclusion I come to is, that the stock on which the graft is worked has an action similar to that of the Paradise stock in apples. — *John Watson, St. Alban's, in Gardener's Chronicle.*



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

A CORRESPONDENT states that he finds it convenient to prepare and set an asparagus-bed in October, and wishes to know if it can be done at this season with good results. He also asks if yearling plants of Conover's Colossal are preferable to plants of two years' growth of the variety usually found in our markets, or sold by our seedsmen.

We are of the opinion that April and May are the best months for planting

asparagus-roots; though we frankly confess our want of experience with regard to setting them in autumn. If a saving of time is desired, the bed might be prepared in October; and it would then be in good condition to receive the plants in spring. There can be no possible doubt as to the success of this method; and we recommend it for our correspondent.

Yearling plants are to be preferred for setting. An interesting statement of the result of setting plants, one, two, and three years old, will be found in our April number of the current year; and to this the writer is referred.

Of the merits of Conover's Colossal we are not prepared to speak, though we have made arrangements to give it a thorough trial. We think it will be difficult to find a variety of asparagus, whatever may be its distinctive character, that will uniformly reproduce itself from the seed. You may purchase your seeds of whom you will, and under what name you please, and two grand requisites for the production of "colossal" asparagus will still remain to be supplied; viz., a naturally strong soil and generous cultivation. If these conditions are wanting, we think the cultivator will look in vain for any resemblance between the asparagus that comes to his table and the beautiful life-size illustrations which embellish the pages of our horticultural journals or the catalogues of our seed-merchants and nursery-men.

Editor of "Journal of Horticulture:"—

CAN any one tell what is the origin of the striped varieties of pears, or rather sub-varieties? for there is no striped sort except there is first a plain sort. The oldest one known to me is the Striped Long Green, or Culotte de Suisse; and we have also striped varieties of the St. Germain, Madeleine, Rousselette de Rheims, Beurré d'Amanlis, Duchesse d'Angoulême, and perhaps others that do not occur to me now. I think they all come to us from France; and I know the wood as well as the fruit is striped, and they are less vigorous than the plain varieties. Yours, *B. J.*

MR. EDITOR, — I find an idea is entertained by some persons, that, in transplanting trees, they should be placed in the same position with regard to the points of the compass as before. Do you regard this as important? *K. P.*

No: the reason commonly assigned is, that the bark is thinner on the south side; and, if turned towards the north, it will be injured by the cold. We have never paid any attention to this point, but, more often, have taken care to turn a tree round in exactly the opposite position to that it occupied before, in order that the westerly winds which prevail here in summer, and had caused the top of the tree to hang towards the east, might at least partially restore the balance; and we have never found any harm from this practice.

MR. EDITOR, — The statement in the Journal for July, that you "were not aware that 'patience' could now be found cultivated in any garden in the country," brings to mind the advice of an experienced horticulturist, who, when asked by a beginner what books he had better read, recommended the Book of Job! I think it was good advice. *T. G.*

QUERIST, Boston. — Your bulbs which have increased so as to break the pot are those of the west-wind flower, *Zephyranthes:* it is a charming little summer-blooming plant, and does well in the open border, drying off, and being kept away from frost in winter.

Your other "bulb, with a black skin, long leaves, and scarlet, peculiar-shaped flowers," is probably *Amaryllis* (*Sprekelia*) *fermosissimus*, or Jacobean lily. It requires the same treatment as the *Zephyranthes.*

Z. A. — Best varieties of quinces? — There are not many kinds of quinces in cultivation, and all are good; but the most popular in the market is the Orange or Apple Quince. Rea's Seedling is a variety of the Orange, a third larger, not generally tested; but, wherever tried, it proves very large and of fine quality. The tree is a strong grower, with dark, vigorous foliage. The Pear Quince is later, and is excellent for flavoring apple-sauce in the winter. We recommend planting mostly Orange or Rea's Seedling, with a few of the Pear.

MESSRS. TILTON & CO., — Will you give me your opinion as to when is the best time for me to sell my crop of Early Rose Potato? I planted ten bushels last spring; and I now have three hundred bushels which I would like to sell. The ten bushels I planted last spring are the product of a peck the season before. *G. T.*

Our advice is to sell when you can get the best price, which you can judge of as well as we. But sell them at fifty cents a bushel rather than let them rot.

H. E. B., South Haven, Conn. — Your beautiful wild flower is the cardinal-flower (*Lobelia cardinalis*). It is described, and directions given for its cultivation, in our last volume, p. 351.

IDEM. — The worms on the pear-shoot sent are the *Arctia textor*, *Hyphantria textor*, or *Spilosoma textor*, of Harris's treatise, commonly called the "fall caterpillar," or "fall web-worm." Besides the pear, plum, apple, cherry, and quince, which you mention, it is also destructive to the elm-tree. Towards the end of August, or in September, they disperse, eating whatever plants happen to come in their way, till they find suitable places of concealment, where they make their thin and almost transparent cocoons, composed of a light web of silk with a few hairs mingled. They remain in the chrysalis state through the winter, and are changed to moths in June and July. The eggs are laid in a cluster on a leaf, near the extremity of a branch, and are hatched from the last of June to the middle of August. They eat the upper surface of the leaves, proceeding down the branch, covering the whole with their web, which is often three or four feet in length. The only way to destroy them is by crushing the caterpillars; and, as with other insects, this is best done when they are young, — the sooner the better.

The presence of large numbers of insects in your neighborhood will not account for their scarcity on your place. They would be more likely to be plentiful there when there are plenty around you.

Brewer, Boston. — Seedling geraniums will not indicate the color of foliage they will retain at maturity until they are of some size.

The first leaves of plants rarely show the character of the foliage. After your geraniums have eight or ten good leaves, you can rely upon them.

H. M. Piatt, Gardiner, Me. — The flower you send is *Stuartia pentagynia*. which is probably the finest summer-blooming shrub we have. Can it be hardy with you? We did not suppose it would stand the winter so far north, though in Massachusetts it does well.

It was introduced to notice by Parsons of Flushing, L.I., who, however, has most unaccountably no stock of it, as he replied to correspondents of ours this last spring. Will not some nursery-man get up a stock? It is a shrub which should be in every garden; for, whether in foliage or flower, there are few things that can equal it in beauty.

Peter Puzzled, Kutsee, Io. — We can hardly turn our Letter-Box into a botanical dictionary for you. Most of the terms whose meaning you inquire, you can find in any dictionary. There is a valuable little work by Rev. J. S. Henslow, published by Groombridge, London, called "Dictionary of Botanical Terms," which will tell you all you wish.

We give you, however, the meaning of a few you might not readily find.

Lasianthus comes from two Greek words, meaning "rough" and "a flower," and means when the pubescence on a flower is like velvet.

Oxycanthus, from the Greek "sharp" and "a spine," and means having many sharp thorns.

A *pepo* is a gourd.

You confuse "order," "family," "genus," "species," and "variety."

1. "Order" and "family" are the same. 2. "Genus" is the smallest natural race composed of distinct species. 3. "Species" is an assemblage of forms, which (as it is empirically assumed) might have emanated, according to the laws of reproduction, from one or more individuals of a particular form as this was impressed by the Creator when such form was first called into existence.

"Variety" is an individual possessing a form to a certain degree modified from that which is considered to be most characteristic of the species.

New Subscriber, Wellington, Md. — *Lilium longiflorum* very frequently has three flowers. Our plant in the July number showed only the common form.

I see you advertise seed from the President Wilder Strawberry for sale. Will you please send me a package, and say when will be the proper time to plant it?

Thanks for your early reply to my former question: it has proved perfectly satisfactory. *G. M.*

Strawberry-seed may be sown as soon as it is cleared from the fruit. A part will germinate in about two weeks. These young plants should be protected by

a frame ; and, on the approach of winter, they should have some coarse manure or litter thrown over them. The rest of the seed will come up in spring. Or the seed may be sown in boxes in the greenhouse in winter, or in the open air in spring.

THE inquiry, in our August number, as to the hardiness of the Downing Mulberry, has brought out the following notes from two widely-separated parts of the country, for which we thank our correspondents. We are also informed by another of our friends, that it does not succeed with him, and does not think it will generally escape without injury from the winter near Boston.

To the Editor of "The Journal of Horticulture:" —

I HAVE a tree of Downing's Mulberry, now in its tenth year from planting. When first planted, its growth was luxuriant ; and the wood, which was not well matured, was killed by the winter.

I regard it now as perfectly hardy ; bearing, without injury, a temperature of twelve or fifteen degrees below zero.

I do not regard it as ever-bearing. It produces *one crop*, like any mulberry ; though its berries ripen in succession, lasting, perhaps, two months.

It appears to be a sure and regular bearer ; its fruit commencing to ripen at the middle of July. Its value, in my judgment, is not in its use as a dessert fruit (it is too sharply acid), but as a fruit for cooking. A pie made of it is the *ne plus ultra* of all berry-pies. My tree has split at one of the main forks ; and I secured it by a bolt. I observe another indication of an approaching split, which will need care. If this is a common habit of the tree, those who cultivate it should by careful training obviate the tendency.

Early Rose Potato is with me a splendid success. It is early, productive, of fine form, and uniform size ; and, in quality, it leaves nothing to be desired.

Truly yours, *H. C. Beardslee.*

PAINESVILLE, O., Aug. 10, 1869.

I PURCHASED, some five or six years since, three trees of the Downing Mulberry, all of which are dead, though I cultivated them with care. On the north side of our estate, the garden is protected by a belt of evergreen-trees, some twenty-five feet high. The mulberry-trees were planted south of the evergreens, a location supposed to be favorable for tender trees and plants. One tree died the year after transplanting, another the third or fourth, and the last this year.

CAMBRIDGE, MASS. *B. G. S.*

HAS any one ever grafted the pear on the shad-bush ? (*Amelanchier Canadensis.*) — They are closely allied ; but, the shad-bush being of small growth, the union would dwarf the pear.

SUB-TROPICAL, Albany, N.Y. — The best new cannas are *Maréchal Vaillant*, *Depute Henon*, *Daniel Hoienbrenk*, *Edouard Warren*, and *Jean Vandael.*

They are magnificent in foliage and flower.

Gardener. — Your questions are hardly in our line; but we answer: —

1. You certainly have no right to go into another man's garden without his permission.

2. "Nipping off a cutting" is downright stealing, and of the meanest kind. It may be a great object to the owner to preserve the stock of a certain plant; and you have no more right to take a cutting than you have to take his watch.

3. Fruit fallen to the ground is as much property as fruit on the tree; and, unless allowed so to do by your employer, you have no right to give any fruit away.

4. If you are hired by the year, and for your whole time, you have no right to hire yourself for any outside service.

5. Gloxinias root readily from leaves pegged into damp sand in a stove.

6. *Acer negundo variegatum*, or *Negundo fraxineflorum variegatum*, is the best variegated tree we have.

S. T. — The best stock to graft pears on for general orchard-purposes is the seedling-pear. The young seedling stocks imported from France and England are much superior to those raised in this country; or, when raised here, imported seed is preferred. The best seed is obtained from the hardy and vigorous kinds used for perry. But, of late, the demand for pear-seed has been such, that every thing that looked like a pear-seed has been put into the market: so, unless you are sure of your seed, it will be safest to buy your stocks, and the best stocks are the cheapest, at the highest price. For dwarfs to plant in gardens, the quince-stock is now used altogether; the Angers variety being preferred. In altering the tops of old trees, it is well, as far as possible, to put each kind into a stock having some affinity to the graft; but considerable knowledge of varieties is required to do this.

Names of Plants. Subscriber. — No. 1, *Linaria cymbalaria;* No. 2, *Lunaria biennis.* A. W. T., jun. — The fern is *Pteris tremula;* the vine *Apios tuberosa;* the leaf is undistinguishable. Tyro. — No. 1, *Calystegia pubescens;* No. 2, *Oxalis Acetosella;* No. 3, fruit of *Clintonia borealis;* No. 4, *Vaccinium Vitis Idæa.*

A. M. C., Rhinebeck. — The prettiest columbine is *Aquilegia glandulosa*, blue and white.

Newton, Mass. — Give your lilies peat-loam and sand, with well-rotted manure, and their growth will surprise you. Keep the bulbs, in transplanting, as short a time out of the ground as possible.

CARNATIONS. — HOLLYHOCKS.

By Rev. Henry Ward Beecher, Brooklyn, N.Y.

A great many persons would be glad to have fine flowers, but for the impression that they require some mysterious skill, or such critical care, or that they are expensive both in time and money. This impression is strengthened when one attempts to rear flowers after the careful manner of professional florists, or as they are seen in the carefully-kept parterres of gentlemen of wealth and leisure. It would do much toward floriculture if it were understood that flowers can be raised full as easily as a crop of peas, a row of beans, or a bed of beets. Without discrediting in any way the nicely-kept flower-grounds, I yet think that my way of raising flowers is more likely to induce imitation and success. I raise them in large quantities, and just as I would a crop of vegetables. I will mention my method with two kinds, — carnations and hollyhocks.

Carnations. — I have at this present writing about five hundred carnations and picotees in bloom, and three-fourths of them very fine in quality : they are scattered about all over my grounds where I have room for them,

in beds, in rows, and in groups. I plant my seed, say from the middle of May to the first of June, in seed-beds, just as I should carrots, — rows four inches apart, and seed covered an eighth of an inch deep. In two weeks, they will, if the weather be favorable, break ground. When they are two inches high, I transplant them, either into the places where they are to bloom, about twelve inches apart each way, or into any compartments which are more convenient to winter them in. They require no further attention, except to keep the soil loose, and free from weeds. *The secret of success in keeping them over winter consists in letting them alone, without any protection.*

If you cover them, they will keep well until the spring ; but, soon after the covering is removed, they will turn brown, and perish. I formerly lost half my stock ; but, now that I leave them just as I do the grass on the lawn, I seldom lose a plant. Good seed may be obtained of any reputable florist. I formerly was very particular in trying to get choice Italian seed; and one-half the time I succeeded in getting choice and expensive Italian humbug. I now buy the best seed, quite indifferent whether it is French, German, Italian, or American.

In some years I am deceived, and have a crop of single pinks. Of course, I am duly vexed, and blow up seedsmen in general, and my man in particular. He is very sorry too, and says he bought it for the best, but that foreign seedsmen are so little to be relied on! Well, after appeasing my indignation, I turn to my single pinks, and declare, that for brilliancy in color, abundant fragrance, and simplicity, they far excel double ones. But at least, four years out of five, I get genuine seed, and hosts of fine carnations of every shade of color ever found in this class of flowers.

I never attempt to preserve any, though I have plants which a florist would jump at the chance of preserving ; but I take a greater pleasure in planting new seed, and curiously waiting to see what it will produce.

This is written, not for exquisite amateurs nor professional florists, but for common people who would like to possess carnations, and are not too exquisite in their notions. Any good garden-soil is good enough for them. The artificial soil, the pottings off, the extra liquid-manures, may all enhance the amusement of competitors for premiums ; but flowers good enough for plain people, and enough of them, can be had without this trouble. *Once get good seed, and carnations are as easily grown as common grass.*

Hollyhocks. — I am very proud of my hollyhocks. They are the glory of my garden. I prefer them to roses, in all but odor. They are scentless. I except, also, the beauty of the rose-bud. I must own, also, that roses have poetic associations surpassing the hollyhocks; but so, too, they have slugs and bugs and diseases to which the hollyhock is a stranger. Thus far, I have never known an insect or a disease to prey upon my hollyhocks.

In the range of brilliancy of color, in the superb fulness of form, in a certain softness and cloud-like effect produced when the blossoms are arranged upon a flat dish, in the surpassing boldness and almost grandeur of the spikes of flowers which shoot up from among the foliage of the garden like the spires of a cathedral from among village trees, the hollyhock has no rival or peer.

Choice seed can be easily obtained of seedsmen, of both English and American growth. A plantation may be reared every year; or, by cutting back the stalks as soon as the earlier seed-pods have ripened, new side-shoots will develop from the root; and, though the old root will die, these new germs will establish themselves in their place, and so, in effect, change a biennial into a perennial.

The seed are sown in early summer; transplanted, when three or four leaves are made, eight inches apart; and in late autumn, or early the next spring, placed where they are to blossom. When new plantations are made, all poor colors, single flowers, and stingy growers, are weeded out promptly when their faults are disclosed. I have been lucky in seed. From choice English seed I get ninety per cent of double flowers, and of all colors.

Besides a place in the flower-garden, one might plant groups of hollyhocks with admirable effect along the edge of forest-trees and in shrubberies. If the space is ample, the finest effect is secured, six to ten plants of the same color in each group.

The *whites*, with me, are the least robust growers. The range of color is wonderful. The *white* reaches up through three or four gradations to yellow; the yellows, in straw, buff, sulphur, orange (and each one in several shades), go on to the pinks, which are endless in gradations; then come scarlet, crimson, maroon, and in each one subdivisions of color, until the lip fails to find terms by which to designate the shades of color which the eye clearly distinguishes.

I am partial to generous flowers; and I have had such good luck with many other kinds, by simple and inexpensive methods of treatment, that I am satisfied that a poor man's grounds may blaze all summer long, if only his eye is as hungry for color as his mouth is for taste.

AUTUMN TRANSPLANTING

Has many advantages over spring transplanting; the first and not the least important of which is the comparative leisure of the season, especially to nursery-men. We know of no greater satisfaction than the reflection, at the approach of winter, that all the work which could possibly be done to save time in the hurry and drive of spring-work has been thoroughly done; that all the gaps in the young orchard-rows have been carefully filled, and the roots protected by sufficient litter against the cold of winter, and the tops staked, or otherwise guarded against being shaken by the wind.

Another and perhaps a still greater advantage of autumn planting is the superior condition of the soil, — dry, warm, and friable; while in spring, especially on heavy soils, and even in light soils in the early part of the season, the ground will often be so wet and cold that it is impossible to plant a tree properly. A man cannot set a tree in the best manner without putting his hands into the dirt; and the discomfort of handling cold, wet earth is not unworthy of consideration. Every owner of a fruit-garden of any size should have a few large trees in reserve, so as to replace any that may die without injuring the uniform appearance of the rows; and, as these will require special care in transplanting, it should by all means be done in the genial days of autumn, when both air and earth are favorable for the work. In such days, how can any man who intends to plant trees possibly defer it to the hurry of spring, and very likely to the end of the season, when the buds are starting, and the danger of injury is tenfold? Besides the greater loss from evaporation, the greater injury by rubbing off the bud in handling is a serious consideration.

DRUMMOND PHLOX.

By Joseph Breck, Ex-President of the Massachusetts Horticultural Society.

Phlox Drummondii. — Of all the annuals, I think there is no class more desirable for ornamental purposes than the Drummond Phlox, which has

PINK DRUMMOND PHLOX.

now sported into numerous varieties, of all rich colors and shades except bright yellow and blue.

One of the latest novelties is a yellow Drummond Phlox, so called. This was eagerly sought after by amateurs ; but, after one year's experience with it, a cold shoulder was turned upon it. The color is a dingy straw-color, and dirty-looking at that, and not desirable in comparison with the more brilliant varieties. There is what is called a blue variety ; which is only a bluish lilac, and not a clear blue. It is desirable, and would be a great acquisition, if a clear bright yellow or blue variety could, in the course of cultivation, be produced. Perhaps it is as impossible in the chemical properties of the plant to produce a blue Drummond Phlox as it is said to be in the dahlia. However desirable it may be to add these colors to the glorious shades and tints of those already in our possession, I think we should be pretty well satisfied and contented with such as we have.

This beautiful phlox was first raised at the Botanical Garden, Manchester (Eng.), from seeds which were received in 1835 from the celebrated botanist, Mr. Drummond, now deceased, who travelled in Texas, where he found the plant growing in great profusion. It was named by Dr. Hooker after its indefatigable discoverer, as a tribute of respect to him. It was, at the time of its discovery, considered doubtful whether it would prove an annual or perennial ; and the writer who first described it said, " Should this lovely species turn out to be an annual (which, to all appearance, it will), it must be regarded as a novel feature in this favorite genus. The plant is perfectly hardy, and will prove a great ornament to the flower-garden." The writer describes it as follows : " The plant is about a foot high, covered with long hairs ; corolla salver-shaped ; limb spreading, pale rose-color without, rich rosy-red within ; eye deep crimson ; throat yellow." Thirty-five years only have passed since this beautiful flower was introduced into England, and a few years later into this country ; yet what a wonderful accession has it been to the floral world ! and what improvements have been effected by cultivation ! How should we be enabled to give brilliancy to the flower-garden without it ? Instead of the clear rose-color of the original, we have now a pure white, white with a purple eye, brilliant dark scarlet, very dark blood-color with black eye, plain crimson, rose, lilac and dark purple flowers with white eyes, blue or blue-lilac with white eye, and various colors and shades, striped and mottled. Isabellina is the yellow variety already alluded to.

Chamoise-rose is a novelty of last year, but is of no account: the color is of russet leather, shaded with rose, and will not add much brilliancy to the flower-border.

For massing in separate colors, it is not surpassed by any other bedding-plant: it continues long in bloom. To have a solid mass of flowers, the plants should be put out about six inches apart. The seed should not be sown in the greenhouse or hot-bed too early, as I have done sometimes, to my sorrow, as the plants get drawn up, grow stragglingly, and never recover from that habit, and by the middle of August the bloom is nearly over. It is in season to sow the seeds in the greenhouse or hot-bed the last of March or beginning of April. When of sufficient size, the seedlings should be transplanted into boxes: by the last of May, they may be planted out. Such plants will be more compact and stocky than those of the former description, and will continue longer in bloom, although they will not come into flower quite so soon.

Seeds sown late in autumn in the open ground will be in advance of those sown the first of May by one or two weeks. Seed sown where the plants are to remain will continue in flower until frost; and this is undoubtedly the best way to grow. Plants succeed in any good rich garden-soil, if not too heavy and wet.

Foreign florists and seedsmen are annually getting up some kind of novelty, in which the amateur florist, and lover of flowers, sometimes get sadly disappointed. Thinking, by the description set forth in the catalogues, that they are about to be astonished by some marvellous, new, and startling floral production, they are not unfrequently as much surprised at the result as the *savans* were when the mountain in labor brought forth a mouse.

The seedsmen on this side of the Atlantic are considered "old fogies," and behind the times, if they do not have all these expensive foreign novelties wherewith to answer the calls of a certain class of customers who are always after something new. The Yellow Drummond Phlox is a sample of the numerous disappointments which are known to florists. The novelty of this spring was described as follows in a Prussian catalogue: —

"*Phlox Drummondii Heynholdi.* —*The new true scarlet Phlox* (Benary). There is already in our gardens a bright variety of much value, known

under the name of *P. scarlet* (coccinea); but its flowers, though of a very brilliant color, are far from being the true scarlet, and only of a radiant, bright dark-crimson tint. The flowers of this new variety offered here are of the pure true scarlet, with a slight tinge of copper-color. The phloxes, among which we have a good portion of distinct tender and bright tints, belong to our best and most useful annuals: but this new variety will have the first place everywhere between the most striking of them; and, for composing whole true scarlet groups of it, it will be highly welcome. It is quite constant, of dwarf, compact habit, one of the best acquisitions of modern horticulture, and the very complement of phloxes (prints to be had). The produce of seeds being too scarce, I am obliged to offer this novelty in small quantities, and only at a high price,—for a hundred seeds, thirty shillings." Well, that is a pretty good price, amounting, when all charges are paid, to fifteen cents per seed. Of this novelty I had the following experience.

I received the print, which I found to be a pretty good representation, although, as in most cases, a little exaggerated. I planted fifteen seeds in my greenhouse in March: of these, seven only vegetated; and I raised and potted only six plants, which were turned into the ground in June. Some of them had already begun to show flower. Soon some of the plants began to dwindle; and I found that the wire-worm, or some insect, was at work at the roots: they continued their depredations until they had destroyed all but one plant. This flowered very full, more dense than the old varieties, and the plant more dwarf and stocky. The flowers answered to the description given by the Prussian florist, but were not so large as the common sorts. Before a single seed was perfected, the plant seemed to blight, and died off: so there was an end to my experience; and I shall have no seed except that which may be obtained by importation.

HYBRIDS OF LILIUM AURATUM.

By Francis Parkman, Jamaica Plain, Mass.

This superb lily certainly has not the hardiness of constitution of the old Japan lilies; that is to say, the varieties of *Lilium lancifolium*. Now, if the size and the fragrance of the one could be combined with the robust constitution, and the bright, clear coloring, of the other, it would be a great acquisition.

Six years ago, we impregnated the flowers of *L. lancifolium* with the pollen of *L. auratum*, which had then just made its appearance. Impregnation took place readily; and we obtained a considerable quantity of seed, though a great deal of it was lost from mildew. During this summer, many of the plants have blossomed; and the result is sufficiently curious. In the first place, we should say that there can be no doubt that hybridization actually took place, as the anthers of the flower to be impregnated were all removed before they matured; and the operation was carried on in the greenhouse, which contained no other lilies of any kind. The young lilies, during the first two or three years of their growth, showed marked signs that they had inherited the blood of *L. auratum*, their leaves being narrower, and their stems mottled with darker spots, than in the case of the unmixed *L. lancifolium*. But, when it came to the flowering, the result was different from what might have been expected. In the entire bed, one plant, and one only, showed the peculiar flower-bud of *L. auratum*. This bud grew rapidly, immeasurably surpassed all those of the other plants in size, and blossomed three weeks earlier than any of them. The bulb which bore it was not larger than a pigeon's egg, and the stem was no thicker than a stout knitting-needle; yet the flower measured nine inches and a half in diameter. In color, it was like a very deeply-colored variety of *L. lancifolium;* but it had the fragrance of *L. auratum*. When the bulb has reached its full growth, the flower will undoubtedly be much larger, and, in all probability, the plant will prove as hardy as its female parent.

Now, as to the other seedlings in the bed, most of them are at this moment in bloom, and the flowers show no traces whatever of their paternal parentage. To all appearance, they are varieties of *L. lancifolium*, and nothing

more. They vary in size and color. Some are large, some are small, some are light, some are dark ; but this would be the case with any seedlings of *L. lancifolium*, whether hybridized or not. That they are in part descended from *L. auratum*, is, as we have said, certain ; and that the flowers show no indications of their double parentage, may be classed among the curious phenomena of horticulture.

In this connection we may mention that we also impregnated the flowers of *L. Canadense* with the pollen of *L. auratum*, using all precautions to make the impregnation certain. The flowers have opened, and they are simply those of *L. Canadense*, showing no trace of the infusion of foreign blood; though the male parent is the largest of lilies, and the female is a very small one.

Aug. 30, 1869.

HALE'S EARLY PEACH.

By D. S. Myers, Bridgeville, Del.

We have had about a third of a crop of peaches at this place ; farther north, in Kent and New-Castle Counties, a very large crop. I noticed last season that the Hale's Early was condemned at the West. I have tested it this season, mostly on young trees two and three years old: a few were four years old. I lost but few by rotting, the oldest trees rotting the least. The weather, at the last ripening of this variety, was very foggy and damp, and what were on the trees at that time rotted very fast. From present experience, I do not think Hale's Early can be grown for market much south of Delaware. For the advantage of those who never have fruited this variety for distant markets, I would say, Do not let them get so ripe as most other kinds. Of all the peaches I am acquainted with, this requires the most careful watching. It will bear more on young trees, will stand more frost and cold, than any other kind I know of ; and where carefully gathered, and at the proper time, it has proved the most profitable of all the peaches fruited in Delaware. I will name one instance : Mr. L. R. Jacobs gathered five hundred and fourteen crates from four hundred and fifty four-year-old trees, netting him between seven and eight hundred dollars.

Aug. 26, 1869.

LA JUIVE PEAR.

By Marshall P. Wilder, President American Pomological Society.

Form obovate or turbinate, slightly irregular; stem fleshy, stout, often swollen at base, and inserted on one side; calyx large, open; color clear lemon-yellow at maturity, a little russeted in blotches or traces; flesh half

LA JUIVE PEAR.

melting, juicy, a little granulous at the core; flavor sweet, tolerably rich, slightly perfumed. Season, December; keeps well; quality "very good." tree vigorous and hardy; foliage persistent, forming a beautiful symmetrical object.

This is a seedling of the Belgian pomologist, Major Esperen, and figured in the "Album de Pomologie."

CELERY.

By Alexander Hyde, Lee, Mass.

The cultivation of this delicious vegetable (the *Apium graveolens* of Linnæus) has greatly increased of late years, and is destined to occupy a still larger place in the kitchen-garden. The flavor of celery is not palatable to all at first taste: but the love of it increases with use; and, when the relish is once acquired, scarcely any vegetable is eaten with more gusto. Like the potato, it has the rare quality of never palling. Lettuce we like in the spring, tomatoes in the summer, turnips in the fall; but celery is a welcome visitant upon the table at all seasons. As a condiment with meat, it greatly aids digestion, furnishing a gentle stimulant to the stomach, and, indeed, permeating all the viscera, and giving each organ new energy. Its action is especially healthy upon the kidneys; and to all who are afflicted with any disturbance of these organs we confidently recommend the use of celery. It is cheaper and more palatable than buchu. As to its efficacy, we will make no comparison, as we have not sufficient data; and besides, if we should say what we think, we might offend Mr. Helmbold. We formerly used celery with meat alone; but now we find no relish equal to this for bread and butter; cheese, even, being less esteemed. A few crisp stalks of celery with a cup of coffee, and a slice of bread and butter, will make a breakfast fit for a king; and, if he wants any thing better for his supper, he can't find it.

Celery well illustrates the effects of cultivation upon plants. In its wild state, it goes under the name of smallage, or smellage as we called it in our boyhood; and we thought it was so named from its strong, unpleasant smell. There is certainly nothing small about the plant, except its seed; for it grows luxuriantly by the side of stone walls and ditches to the height of three feet, with coarse leaves, and an abundance of suckers. We can scarcely realize that the delicately-blanched and still more delicately flavored stalks of celery which now grace our tables trace their lineage to the smallage at which we used to turn up our noses in disgust. It is as difficult to recognize in our modern mild and crisp celery the old strong-scented and tough smallage, as in the sweet and juicy parsnip of

our gardens its stringy, bitter parent, which still defiles some of our farms as a vile and noxious weed. Cultivation does for plants what civilization has done for man.

The consumption of celery would be greatly increased if the impression were not so prevalent that its cultivation is expensive. The old-fashioned mode of planting it in trenches does make much work, and this mode is still too common. A trench is no more necessary for celery than it is for potatoes. Because celery grows wild by the side of ditches, it does not necessarily follow that we must dig a ditch for it to grow in when reduced to a cultivated state. On this principle we should need a mountain on which to raise potatoes, as they grow wild on the mountains of Peru. For many years we raised celery in trenches, because Roessle taught us thus to do in his beautiful little book, and we knew no better: but, thanks to Peter Henderson, we now practise a simpler and easier mode; and it is for the purpose of bringing this simple mode more generally before the public, and thus making celery accessible to the multitude, that we are induced to write. Mr. Henderson published, some two or three years since, his mode of raising celery by surface-culture; but, such is the force of habit, we find in most gardens the celery still planted in trenches. We must, in passing, do M. Roessle the justice to say that his little book was big with instruction, and did the country great service, backed up as it was by the most beautiful celery we have ever seen, daily adorning the tables at the Delavan House. Whoever has enjoyed the hospitality of this favorite hotel under M. Roessle's care, and had his eyes delighted, his palate tickled, and his whole body refreshed, with the beautiful and delicious white and pink celery always found there in the greatest abundance, must have been convinced that the landlord not only knew how to keep a hotel, but, what is more, to keep a good garden; and must have felt stimulated to adorn his home-table, and refresh his family and friends, with this delicious vegetable. Certainly this was the effect on our better half; for, passing through Albany many years since, she was so pleased with the looks of M. Roessle's table, that she purchased his book, and presented it to us, which we took as a hint to raise celery *à la Roessle*. We practised his mode for years, and had good success; but we always felt when digging the trenches, filling them with manure and surface-soil, and turnpiking the bottom of the

trench, so that, in case of rain, the plants might not be drowned, it was, as the boys say, "too much pork for the shilling." Certainly, with all this labor, no one could afford to sell celery at a price which the multitude could afford to pay; and the testimony of all market-gardeners is, that there was much toil and little money in the crop thus raised. Amateur gardeners can afford to dig trenches, and give away celery; and, if they choose to do so, we have no objection: but for those who make a living by their gardens, and the *oi polloi* who raise their vegetables by the sweat of their own brows, there is a more excellent way.

In New England, we prefer to sow the seed in a hot-bed, about the first of April. As the seeds are very small, they require but a slight covering; and an ounce of good seed will produce at least ten thousand plants. Celery loves moisture, and will not bear much heat: we therefore sow the seed on the south side of the hot-bed, where the soil does not become dry so readily, and where the young plant is shaded from the direct rays of the sun. Early in May, it is a good plan to transplant from the hot-bed into an open but sheltered border, so that the young plants may have more elbow-room, may become acclimated, and may get a more stocky growth. To secure the latter end, it greatly conduces to pinch off some of the leading shoots at the time of transplanting. Celery is a hardy plant; and there is no danger, even if the thermometer should sink below thirty-two degrees. In case of a severe frost, the young plants should be thoroughly sprinkled with cold water early in the morning, before the sun's rays have struck them.

For winter use, the seed may as well be sown in an open border about the first of May. If the seed-bed is made fine and rich, we have known these late-sown plants to fully overtake the more pampered favorites of the hot-bed. They are not compelled to pass through the trying change there is in the transition from under glass into the open air. When started in the hot-bed, the glass should be raised whenever practicable; for it must ever be borne in mind that celery loves a cool, moist atmosphere.

For early use, we transplant into the blanching rows in June; and, for winter, the transplanting may be deferred as late as the first of August. Instead of digging trenches, as Roessle recommends, we merely run a plough twice in the same furrow, and in opposite directions, turning out

the dirt on either side, simply making what the farmers call a dead-furrow. This we fill with well-rotted compost (three parts loam, and one part night-soil, we prefer); and, if the celery does not flourish in such a situation, it must be either because the seed is not good, or the work is not well done. For the dwarf varieties, the rows may be three feet apart, and the plants six inches distant from each other. The giant species, of course, require more room. The rows of the large kinds must be at least four feet apart, and the plants ten inches from each other in the row.

The blanching should commence as soon as the plants have attained sufficient size. We know some maintain that celery grows best when not earthed up; but such is not our experience. When not braced together by soil, the branches sprawl around; and it is difficult afterwards to give them that compact form so desirable in a bunch of celery. It is as true of plants as of trees, that as the young twigs are bent, so the perfect growth is inclined. Another objection to the delay of blanching is, that the stems become tough, and acquire a strong taste; and it is impossible by a late blanching to attain that crispness and nutty flavor which early and frequent earthing furnishes. This earthing must always be attended to in the middle of a dry day, when no dew is upon the plant; and the first earthing is best done by clasping the stems with one hand, and bringing the dirt closely around them with the other. This gives compactness to the bunch, and prevents rust, the great enemy of celery. When the stems have once acquired the upward, compact habit of growth, the subsequent earthings may be done by the hoe or spade.

The variety we prefer is the Boston Market, which is reckoned among the dwarfs, though the stems often attain the length of two feet. It is solid, crisp, and of excellent flavor. Seymour's Superb has a more superb look, but requires much more space and labor in its cultivation, and, when grown, is less tender and delicate. The Dwarf Red is much like the Boston Market, except in color, which is of a beautiful roseate hue, highly ornamental to the table. The flavor of the Dwarf Red is also thought by many to be superior; but we are inclined to think this superiority is more discernible by the eyes than the palate, and we very much doubt whether an amateur could distinguish between white and pink celery in the dark. The two, however, contrast so beautifully in the celery-dish, that both deserve a place in every garden.

The great question with celery-growers has been, "How can we best keep it through the winter?" Celery is one of the most delicious vegetables at all seasons of the year, but especially in the winter, when, in addition to its high flavor, the green leaves and white and pink stems give a delightful look to the table, and cheat the season of half its gloom. We have succeeded very well in keeping it in the cellar by digging a trench, and stowing the bunches compactly together in it, and covering them with dry sand, or, better still, with fine charcoal. If the cellar is dry and cool, this is perhaps the most convenient mode for a small family, as the trench is always accessible without exposure to out-door air. If large quantities are to be stowed away, some dry locality must be selected, where the natural drainage is good, and water will in no case accumulate in the trench. This must be dug about a foot wide, and of the same depth as is the length of the celery. The bunches can be stowed perpendicularly in this trench as thickly as they can stand, and the whole covered slightly with leaves or straw. As the cold increases, increase the amount of covering, and extend it a foot or two each side of the trench. A covering of leaves a foot in depth, with a board or some brush over them to keep them from blowing away, will prove an effectual barrier against the inroads of frost; and the celery can be taken out when wanted, and will be found crisp and blanched as perfectly as could be desired, the green leaves even assuming a delicate straw-color.

If we have said a word to encourage the cultivation of this most delicious and healthful vegetable, and to simplify the process of its culture, we shall feel abundantly rewarded for our labor. We desire especially to see its cultivation extended among the farming community, with whom the impression seems to prevail, that the more delicate vegetables are expensive in their culture, and only within the reach of those who can indulge in luxuries. We lately sat down with a large number of guests to a sumptuous dinner on a farm of nearly four hundred acres. Fish, flesh, and fowl graced the table; but no vegetable was to be seen except potatoes: this, too, in August, in the height of the vegetable season, when the system does not require the heating effect of meat, and instinct and reason both point to a vegetable diet. Farmers will find both health and economy in less farm, and more garden; less pork, and more celery.

Lee, Aug. 6, 1869.

CANKER-WORMS.

By Robert Manning, Salem, Mass.

There are some parts of the country which have, fortunately for the apple-growers, never been afflicted with a visitation of canker-worms; and it is to be hoped that they may remain in blissful ignorance of this destructive insect. Owing to the female being without wings, it does not extend rapidly; and, where known, it appears and disappears at irregular and uncertain intervals. In the latter part of the last century, they ravaged the orchards in the north part of Essex County, Mass., until a late hard frost destroyed them, and with them nearly the whole crop of apples. Early in the present century they again appeared, and were again destroyed by a frost in the cold season of 1816. Since that time, they have not generally prevailed until about 1856. In the vicinity of Boston, they were very destructive from 1831 to 1840, increasing yearly until the last date, when they almost wholly disappeared till 1847, when they again began to increase until many orchards were ravaged by them. The first time I ever saw one was in the autumn of 1856; and, though I had given no special attention to their study, I knew it at once as a man instinctively knows his mortal enemy. It was a sluggish-looking insect, apparently unable to crawl up a tree: yet its imbecility was only apparent; for many of them do crawl up in spite of every obstacle that the lords of creation have contrived to hinder them.

As they appear every year in localities where they have never been known before, some account of their habits, and the best known preventives of their ravages, will be of interest. These preventives should be applied during the latter part of the present month and through the next.

The female is a wingless grub, from three-eighths to half an inch in length, with six legs, of a grayish color, resembling the bark of the tree so much, as not to be easily seen on it. When crushed, the abdomen is found to be full of eggs. The male is a moth, with large, thin, silky wings, expanding about an inch and a quarter: its body is of the same length as that of the female, but slenderer. They both begin to come out of the ground in the latter part of October, and continue until the ground freezes

up for the winter; and again in the spring, from the middle of March to about the 10th of April: but, in a mild season, more or less will come out every month through the winter. The females instinctively make their way to the nearest tree, and crawl slowly up their trunks, and towards the ends of the limbs, where they lay their eggs, in patches of from sixty to a hundred or more, in the forks of the small branches, or near the buds on the young twigs; after which they shrivel up and die. The eggs are hatched from the first to the middle of May, just as the young leaves of the apple are putting out, on which they gather, and among which they find shelter from cold and wet. Besides the apple and elm, which they seem to relish best, they are found on the cherry, plum, maple, and lime trees, and on hawthorn-bushes and honeysuckles. At first, they eat little holes in the leaves; but, as they grow stronger, they devour all the parenchyma, leaving only the midrib and nerves, and giving the trees the appearance of having been scorched by fire. No person who has not seen it can realize the melancholy appearance of an orchard after their ravages. From the slowness with which they spread, it sometimes happens that one orchard will be entirely free from them, while in the next not a leaf is to be seen. When full grown, the worms are about an inch in length, but vary in color; some being of a reddish or dusky brown, others grayish, and others of a greenish-yellow or green. They eat until about four weeks old, when they descend to the ground, some passing down the trunk of the tree: but the greater part spin threads, by which they lower themselves; and, while thus suspended from trees overhanging the road, they are liable to be swept off by carriages, and thus disseminated. They immediately enter the ground from two to six inches in depth, where in twenty-four hours they enter the chrysalis state, and come forth in their perfect form in autumn or spring as before described.

It would be very convenient if the canker-worms all had their heads on one neck; but they have not: and the preventive of their ravages which should be no trouble to apply has been long sought, but never found. The Essex Agricultural Society have for some years offered a premium of a hundred dollars for a new, cheap, and effectual remedy for the ravages of the canker-worm; but no application has yet been made for it. As with the curculio, there is nothing to be done but to persevere with the old methods.

The oldest method is tarring the trees. The tar must be mixed with oil to prevent it from drying too soon, and applied every afternoon, as the insects ascend mostly in the night; but, if they are very abundant, it may be needful to be done twice in the day. Sometimes such numbers will attempt to pass up, that those caught in the tar form a bridge for others to pass over. A drizzly rain during a warm night will soon glaze over the surface of the tar, no matter how fresh it may be, so that it is easily passed over; and such nights are the time when they travel most. Cheap printing-ink, made for the purpose, has been found to dry less quickly than tar; but care should be taken to procure a proper quality, as some has been sold which was entirely unfit for the purpose. The ink, like the tar, hardens by cold. I have seen it so stiff on the north side of a tree, that it was no hinderance to the ascent of the insects; and, at the same time, it was so soft on the south side as to run down: when this is the case, stirring up the surface with a brush will be just as effectual as applying more ink. Neither tar nor ink should be applied directly to the tree, but on a strip of cloth or coarse paper fastened round it. A stout string around the lower edge will prevent the tar or ink from running down on the bark below.

A better but more costly method of applying tar or oil, or a mixture of both, is to make a trough round the tree, and fill it. It must be watched and renewed from time to time, and the leaves which blow in removed, so that the insects may not pass over on them; and wind will blow out the oil, but there is far less danger of its being filled with the dead insects. The best way of making the trough is to place it on a box around the tree, filling in the box with tan. The trough may be made of roofing-tin, or of a gutter grooved out of wood, and nailed round the box, and, in either case, should be sheltered by a roof. A very neat patent tin trough is made by Mr. Hilton of Providence, R.I.; which is, however, too expensive for use, except for a very few trees, or where neatness is an object. When carefully attended, the trough of oil is substantially effectual; but, without watching carefully, no remedy will be of much use. A patented protector made of strips of mica I have found entirely useless; and another protector, consisting of a circle of glass in sections, I should not think would be much better, though I have never tried it. Ordway's protector, which is a collar of sheet-zinc placed at such an angle as to be difficult for the grubs to pass

over, is a partial preventive; and if used in connection with the tar, and placed above it, would shelter it from rain. When removed, it should be scalded, to destroy the eggs laid on the under side; and those laid on the bark of the tree below the tar or protector should be scraped off, or destroyed by washing with potash. A belt of cotton-wool, or straw with the ends downward, which has been recommended, forms no obstacle whatever to their ascent.

While the worms are eating, they can be attacked by jarring the trees, so as to shake them down, or by throwing coarse sand into the tree, when they will begin spinning down, and may be brought to the ground by breaking their threads with a pole. They will immediately make for the foot of the tree, where they can be crushed, or a brood of chickens will devour an enormous number. One cultivator told me that he had some young ducks, which, after gorging themselves with the worms, would lie down and digest them, and in about a quarter of an hour would be ready to begin again. Sometimes the belt or trough of tar is used to keep them from re-ascending; but care must be taken that it be not bridged over with their bodies. The worms, when they spin down after they have finished eating, are themselves eaten by robins and the common crow-blackbird; and they are also eaten while on the tree by the Canada robin or cedar-bird: but I have never known of the perfect insect being eaten by any bird. The worms, as before mentioned, are sometimes destroyed by frost; but the perfect insect will endure a considerable degree of cold.

It has been advised to examine trees, and remove and destroy the eggs before they are hatched. This would do very well on young trees, but would be impossible on large ones. Where the grubs are very abundant, they will climb on fences and buildings, and lay their eggs; and these should be taken off, and destroyed. Swine turned into an orchard will root up and kill many of the chrysalids; and it is probable, that, by ploughing to the depth of sixth inches in the autumn, many would be crushed, and others destroyed by the cold.

Among the greatest aids to the cultivator in destroying the canker-worm are other insects which prey upon them. They are also attacked by parasites, one of which deposits its egg in the body of the worm, while another lays its own egg in the egg of the canker-worm. It is probable that the

disappearance of the canker-worm, as before mentioned, is largely owing to these parasites.

It would be a great blessing to orchardists if our chemists could discover some substance that would remain sticky in spite of the elements, or else poison the grubs in their ascent.

NEW VEGETABLES FOR 1869. — No. II.

By Fearing Burr, Hingham, Mass.

Scolime a'Espagne. — Though imported as a novelty, and mentioned in "The London Gardener's Chronicle" as "a new vegetable," this plant is but the Spanish oyster-plant, or scolymus, described in most works on horticulture, and found in the catalogues of our principal seedsmen. So far, however, as regards its cultivation and use in this country, it is indeed rare. There is probably no section where it is grown to any extent; and we think it would scarcely be recognized by many even of our most experienced gardeners and market-men. In Spain, where scolymus is largely grown, it is regarded not merely as a wholesome vegetable, but as a very great luxury.

Though really a perennial, the plant is generally treated as a biennial; the method of sowing, culture, and harvesting being the same as practised in the raising of the carrot or parsnip. The leaves are large, pale green variegated with white, and so thickly set with sharp spines as to be scarcely distinguishable from those of some species of thistle. Indeed, the plant was originally known as "golden thistle," referring also to the color of its flowers. The root, for which alone it is cultivated, is white, and nearly of the size and form of an Altringham carrot; generally measuring twelve or fifteen inches in length, and an inch or more in diameter at the crown. It is easily preserved during winter, and is used in all the forms, besides possessing in a good degree the flavor and general excellence of salsify, or the true oyster-plant.

METEOROLOGY IN HORTICULTURE.

By Dr. John A. Warder, President Ohio State Horticultural Society.

We have heard during the past years so much said about the importance of the study of the fickle elements, and of their bearing upon the success or failure of our crops, that the most doubting and those least informed begin to believe that there is something in the subject of meteorology that is worthy the serious study of the agriculturist.

The valuable papers of Mr. Lippincott, which have appeared in the reports of the National Department of Agriculture, have done much to enlighten the public mind upon this subject: they are, indeed, well worthy of study, and should incite increased attention to the phenomena of the weather. The numerous observers who so patiently and continuously report the diurnal changes in the temperature, moisture, and other conditions of the atmosphere, to the Smithsonian Institution, are doing a great and noble work for the nation; and their combined results are accumulating in the archives of that establishment and in the agricultural department, where they are collated, and put into form, so as to constitute a vast fund, from which deductions of great practical value may one day be drawn that may enable us almost to rule the storms.

Certain data are being accumulated; and they have already reached to such a point, that predictions of some of the leading changes in the weather can safely be made: and we may well feel encouraged to hope that we are on the high road to the discovery of the great laws of storms, or alternations of that aerial ocean which exercises such an important influence upon our crops, our domestic animals, and, indeed, upon ourselves.

Not to look further for an illustration, let us take the grape. The highest authorities of Europe, often quoted in this country, limit the success of this crop to regions that enjoy a *mean temperature* during the growing season which shall not fall below sixty-five degrees, and a condition of hygrometricity which shall not be marked by a greater rain-fall than eleven inches during the same period.

Mr. Lippincott has well pointed out that this last element — the amount of precipitated moisture — is, of itself, not a correct indication of the hygro-

metric condition of the air, and that we need also reports of the amounts of moisture suspended in the atmosphere; we need observations upon the *dew point.* Practical observers of the condition of the crop have also ascertained that serious effects are often produced by the sudden alternations of temperature, and have found that the inroads of fungous attacks generally follow sudden depressions of temperature, even when the atmosphere is comparatively dry. Every greenhouse-man of any experience will cite instances of his plants having suffered in this way from cold draughts, which seem to have favored the development and spread of the microscopic spores of these destructive fungi. The question thus becomes a mixed problem from the number of elements that enter into it: hence the increased difficulty in its solution, and the necessity for more extended and careful investigation.

Fortunately, we have observers already engaged in this very interesting field of labor, who are quietly, but laboriously and patiently, working out a solution of the climatic problem of grape-culture. Where they can do their work fairly, and without the bias of prejudice or preconceived and favorite theories, we may look confidently for happy results. Of such observers is our estimable friend George Huntington, who has long continued his valuable observations in one of the favored grape regions of the West (on Kelley's Island, in Lake Erie), which, from its insular situation, has many conditions that have contributed to the successful production of this crop.

At the recent meeting of the Lake-shore Grape-Growers' Association, held at Cleveland, O., Mr. Huntington read a most interesting paper upon the "Grape-Rot and the Weather," in which he shows, by transcripts of his meteorological observations continued during ten years, that there is another element, which has not received sufficient attention: the period of the rains he thinks of more importance than the total amount, at least in the production of the rot and in the setting of the fruit. He considers a rain-fall during the time of blossoming very obnoxious to the crop.

The value of these facts, which are the result of reliable observations, is such, that no apology need be offered for the presentation of Mr. Huntington's tables. They are, indeed, a contribution to our knowledge, from which each reader may deduce his own inferences. The important points have been so well presented by the observer himself, that it is better

to append his own remarks which accompanied the tables that he laid before the society.

A highly-intelligent farmer in the interior of Ohio reminds me of a common observation in that region, which has been handed down from the first settlement of the country, — that, whenever a cold rain occurred in the early part of June, the oak-mast was certainly destroyed. It seemed as though the young acorns could not withstand the wetting. In this case, the damage was not done to the blossoms, as they appeared at an earlier period. Every cultivator of peaches is familiar with the trouble known as curled-leaf, and all associate its appearance with the occurrence of a cold rain-storm ; though the presence of aphides has by some been considered the proximate cause of the curl. The damaging effect of continued rains and chilly weather, occurring at the period of inflorescence of our fruit-trees, must be familiar to all observing horticulturists. Excessive moisture, and the consequent scarcity of insects, seem to combine in preventing the perfect distribution of the pollen, and the consequent impregnation of the germs.

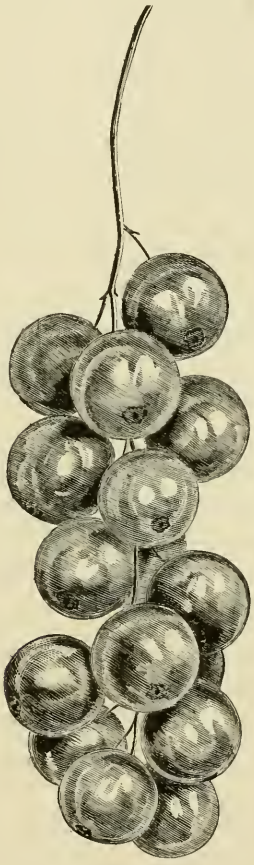
[Mr. Huntington's address, referred to above, will be found in our " Notes and Gleanings." — *Ed.*]

THE VERSAILLAISE CURRANT.

This variety was originated by M. Bertin of Versailles from the seed of the cherry-currant. It is of the largest size, the clusters frequently containing from fifteen to eighteen berries. The color is brilliant red, semi-transparent. The bush is vigorous, and an abundant bearer. It is the best of all the new large kinds : and, though hardly equal in flavor to the Red Dutch, its increased size more than compensates, especially when raised for market ; for which purpose it takes precedence of all others, bringing nearly or quite double price.

It is quite distinct from the cherry-currant, with which it has been sup-

posed by some writers to be identical; the bunch being longer, the berries not quite as large as the cherry, and decidedly less acid and watery.



THE VERSAILLAISE CURRANT.

Our illustration is from a bunch raised by W. H. Barnes, Esq., of Boston Highlands, who received the first premium for the best red currants, from the Massachusetts Horticultural Society.

PEARS AT THE WEST.

By Suel Foster, Muscatine, Io.

Pear-culture at the West is growing in favor. I was of opinion, a few years ago, that the apple was the most profitable, from its being more productive, and the tree more healthy. The latter I believe is true, as a general thing. We are getting more discouraged with dwarf pears than standards. My dwarfs of twelve years' setting are blighting badly this year. I have noticed, that, for several years past, they were blighting more than the standards.

My soil is oak and hickory land, — thin soil for the West, with a stiff, dry yellow clay for subsoil; no lime or gravel (I think this kind of soil, with limestone or gravel, probably is more suitable for both pear and grape). Be that as it may, they both do well on my soil. The pear blights to death generally, in a very few years, in the universal deep, rich soils of the West; yet they sometimes get hold of the dry, hard subsoil, and live on and thrive. I think it would pay most of our farmers to make a clay soil for a few pear-trees: but the pear-grower should go where the soil is ready for the tree; for there is sufficient of it, as cheap as the unsuitable.

The Bartlett is my favorite; for it bears the most abundant crops, is large, handsome, and a good market-pear: its quality is surpassed by but very few of my acquaintance. It is true, the tree, in many instances, has proved too tender for our severe winters; and our Illinois people have been very cautious in recommending it on that account. It is true that I prefer the Seckel for the most exquisite flavor; but my Bartletts produce five times as many bushels as the Seckels. I know of but one variety, out of twenty that I have fruited, that produces more; that is the Vicar of Winkfield: and the quality of that is too poor to be classed among pears, except for cooking. I believe I have but two varieties freer from blight than the Bartlett: these are the Flemish Beauty and White Doyenné. I am thus particular in setting forth the merits of the Bartlett: first, because it is worthy; and, second, because, when I send East to the wholesale nurseries, the proportion of Bartletts is not more than one-fourth enough to suit my customers.

Second to the Bartlett is the Flemish Beauty. It succeeds nearly as

well in every respect, and the trees are more hardy. My friend D. W. Adams, of the north part of Iowa, says the Flemish Beauty is hardy there, and is thought to be the best variety to plant in that part of the country.

The excess of rain this season caused many of our varieties to crack and become very knurly; yet the fine warm weather of August has brought such varieties out much better than we expected. Louise Bonne, White Doyenné, Vicar of Winkfield, Belle Lucrative, and Summer Doyenné, were among the worst affected by the wet season. Those less affected are Rostiezer, Tyson, Glout Morceau, Beurré d'Anjou, Seckel, and others.

At St. Louis, at the meeting of the American Pomological Society, I observed that Western pears were of clearer color, finer and handsomer, than those brought from the East. But, this wet season, many of my varieties have that cloudy or russety appearance. So with a collection of apples we sent from our winter exhibition last January to the New-York Farmers' Club: they were very much admired by those who saw them.

I hear from all parts of the West that the pear-crop is very abundant, while our apple-crop is almost an entire failure. Probably one of the causes of this failure was the cold rains at time of blooming and soon after. Do not storms affect the pear in the same way? My Bartlett trees are now overloaded, and actually breaking down under their load of fine specimens of large, fair, and luscious fruit.

AUTUMN FOLIAGE OF FRUIT-TREES.

Though there is, of course, not so great a diversity in the autumnal tints of the leaves of fruit-trees as in forest-trees, some of them are very beautiful. Nothing can be more magnificent than a large cherry-tree after the leaves have ripened to a brilliant yellow or orange, when glorified in the bright October sunshine. Among pears, the Golden Beurré of Bilboa, and the old Colmar, are remarkable for taking a deep crimson; and the blackberries show every shade of color from green to dark purple.

TREE-WEIGELIAS.

By Francis Parkman, Jamaica Plain, Mass.

A weigelia grown as a bush takes up a great deal of room, and costs a great deal of trouble to keep it within bounds. This is especially the case with the new improved varieties, which are very strong growers, making shoots of four or six feet long in a season. Now, we have experimented for some years past, with the object of reducing them within reasonable limits, so as to prevent their engrossing too much space, and to make them available for small flower-beds as well as for the lawn. This can be accomplished by making standards of them; in which form they will produce such a prodigious number of flowers, that last June we had several with heads twice as large as a bushel basket, and so densely covered with bloom that the leaves were hidden in the mass of color. These heads were round in form, and borne on a stem from four to five feet high, so strong as to require no support.

These tree-weigelias can be made in the following manner: Strike cuttings of the young wood at the middle or end of summer. They will root very easily in a frame or under a bell-glass on the shady side of a hedge or fence. In the spring, plant them in rich, deep soil, and a warm, sunny situation. Before winter, they will form a vigorous little bush. In the following spring, manure the ground, unless it is extremely rich; and cut down the bush to within an inch of the surface. It will at once begin to throw up a number of strong succulent shoots from the crown of the root. When these are two or three inches long, slip off the smallest and weakest of them; then choose out the strongest and most upright shoot, and pinch off the tops of all the rest. If they were all removed at once, the supply of leaves would be insufficient to meet the demands of the root, and the vigor of the plant would be diminished; but as the chosen shoot grows, and develops its leaves, the rest should be pinched back, and finally removed entirely, though not all at once.

The chosen shoot is now left alone, drawing all the nourishment of the root, and nourishing it in turn by the broad, healthy, deep-green leaves with which it is furnished from top to bottom. It will throw out side-shoots;

but these should be slipped off as fast as they appear, as well as all shoots from its base. It will thus grow from the top alone, and, by the end of the season, will form a straight stem six feet or more high. This is the trunk of your tree, the top of which is formed during the next season in the following manner: Rub off all the buds that begin to grow along the stem to within a foot or more of the top. Here many buds will rapidly develop, and push out on all sides into succulent shoots. When these are about six inches long, pinch off the tips with the thumb and finger. This will cause them to branch; and the branches, being treated in the same manner, will branch again. Thus, before the season is over, you will obtain a compact head, round, or of any shape you please to make it; for, by this system of pruning with the finger and thumb, you can completely control the growth. Your tree is now complete, and, the next summer, will astonish you by its mass of bloom. It will continue, however, to develop for several years; being kept in shape by finger-pruning, and all side-shoots from the stem being rubbed off.

Such a tree requires three years from the planting of the cutting for its formation; but a smaller tree may be made by the end of the second year. To do this, pinch off the top of the young stem when it is from three to four feet high and in full growth. This should be about the end of July. It will soon begin to throw out branches at the top, which should be pinched back as before directed. In October it will have formed a head from a foot to a foot and a half in diameter, which will bloom abundantly in the next summer. Thus you obtain a tree some four feet high instead of six or seven feet. A row of such trees planted at intervals along a garden-walk would be a very attractive object, and they would not interfere much with the flowers below.

The old *Weigelia rosea* is not suited to this use. We have found the best varieties for trees to be *W. splendens* and *W. Desboisii*. *W. Isoline* also answers pretty well, though it does not make so straight and clean a stem. Probably the large, strong-growing *W. arborea* would do extremely well; though we cannot answer from experience. All these are robust in growth, with a tendency to form straight, upright stems. Other species and varieties, such as *W. multiflora*, *W. hortensis nivea*, and the variegated-leaved sorts, might be grafted on them as stocks.

HARVESTING EARLY POTATOES.

By W. T. Coggeshall, Hamburg, N.J.

For the last two years, early potatoes have been my main crop; and I have seldom raised any other kind for home-use and marketing-purposes. My practice has been to dig them (what I intended to keep over winter) whenever the tops were *all* dead, and store in a dark, cool cellar, where they have invariably kept perfectly sound, and into late spring. I have never been troubled with potatoes rotting; not even with varieties that have failed, in this respect, with others. To be sure, I have been careful to grow only varieties least susceptible to disease; being equally careful in the selection of soil, and in applying the proper manure; to which, and shovelling over the seed in lime, I attribute such exemption from the rot. I have restricted myself almost exclusively to growing early potatoes, for the reason that it costs no more to raise an early kind than a late one; while the former can be harvested even before they are fully ripe, and marketed immediately, if desired, with the probability of bringing higher prices than late ones usually bring in the spring; and, if desirable to keep over, I have invariably found that an early potato will preserve equally as well as a late one, with the exception of a natural tendency, owing to the earliness of the variety, to sprout earlier, which may be easily prevented in a great measure, if not wholly, by storing in a *cool*, dark cellar.

When it is not convenient to dig them as soon as ripe, potatoes may be left in the ground, even in very unfavorable seasons (provided it is a variety free from rot), for a considerable length of time, until a more favorable opportunity offers, without any serious injury; only, early potatoes that are dug late are apt to have a duller appearance, and to be disfigured by grubs where these happen to be plenty. What effect leaving them in the ground may have upon their flavor, I am unable to determine; but, judging from my own experience, I am inclined to think the injury from this source is very slight, if any.

The results of my own practice and experience, however, incline me to the opinion, that it is better, on the whole, to dig when the tops are *all* dead, and store immediately in a cool, dark cellar; and that it is only when this

cannot be done that it is advisable to leave them for a longer period in the ground.

While speaking of potatoes, allow me to say further, that I have this morning dug a hill of Early Goodrich potatoes grown from a slip or sprout transplanted in the spring, which produced me eight potatoes as large as one's fist, besides five smaller ones of an eatable size; making, in all, thirteen in the hill.

Aug. 9, 1869.

BOSTON-MARKET TOMATO.

By Fearing Burr, Hingham, Mass.

From the best information we can gather, this variety originated with some of the market-men in the vicinity of Boston, Mass.; and was probably obtained by selection. There is little in the foliage or general character of

BOSTON-MARKET TOMATO.

the plant that would distinguish it from many others; but for some years it has been considered one of the most productive, and at the same time one

of the most salable and best, of all the sorts extensively grown for city markets.

The fruit is of full medium size, generally smooth and regular, of a deep rich scarlet or red color, almost destitute of rind, fleshy, and nearly solid to the centre, with few seeds.

Though in the process of ripening it colors less promptly and perhaps less perfectly about the stem than the General Grant, and does not, perhaps, possess the solid, meaty character of the Maupay, still the yield is so generous, the fruit suffers so little from transportation, and it is withal of so good quality, that it must be classed among the few really valuable sorts now in cultivation.

Compared with the Boston-Market, some growers pronounce the General Grant essentially the earlier ; but this does not quite accord with our own experience. Cultivated under precisely similar conditions, the difference in the time of ripening was not important.

CRITIQUE ON THE SEPTEMBER NUMBER.—As regularly as the month comes round, we find Mr. Breck bearing in his hands his floral offering; and now he presents us with directions how to cultivate the Antirrhinum, spiced with quotations from his favorite, the quaint old Gerarde. But what would Gerarde have said to the marvellous new varieties of all hues which the florists have given us within the last fifteen years or so? Sometimes, when I read over these old authors, I am surprised to find how much they knew which we are apt to consider as modern discoveries; but it cannot be denied that we have the advantage of them in the possession of these new creations, as I may call them, which the florists of our day have unfolded to our view.

Notes on Raspberries. — The raspberry can never be as popular a fruit as the strawberry, for the very reason that it does not come until the strawberry has taken the edge off of our appetites after we have fasted from fresh fruit for months. Nevertheless, it is desirable to know the best kinds; but I am at a loss to know why it is that tastes differ so in Boston from the New-York and Philadelphia markets. Of course, any one would prefer Knevett's Giants to Philadelphias, if he could afford to pay for them; but how about those who cannot afford to pay? Does everybody in Boston pay fifty cents a box for raspberries? or do all but the rich go without them? If the latter is the case, then our horticulture is not perfect; and this brings me to say, that it never will be until we can reply to Mr. Merrick's incisive question, "How many families do you know that enjoy an abundant supply of fruit throughout the year?" that everybody has it. We hope nobody will talk about too much fruit until these questions, which go right to the heart of the subject, as far as the producer is

concerned, are answered. But, if all the stories that I have heard are true, there is need of improvement in the distribution, as well as production, so as to bring fruit to the consumer in the least time and at the smallest possible cost.

Parlor-Plants and House-Plants. — Two good papers for a good object; and, as Dr. Channing says, "a much more important one than how to grow plants in a greenhouse." But what shall we do when Mr. Rand tells us that the rose is not suitable for a window-plant, and Dr. Channing finds that he can blossom them all winter, great authorities to the contrary notwithstanding? Why, I say, grow them, or at least try to grow them, in spite of the great authorities.

"What has a description of wild orange-trees to do with horticulture?" asks the practical man, or he who considers himself a practical man. Well, I can't say that it will help us much to grow apples in New England. But these same wild oranges are of great value as stocks for the improved varieties: and I have faith that it will not be long before the wilderness of Florida will blossom not only with the rose, but every other flower and fruit of tropical as well temperate climate; and, until that good time is come, I shall always like to hear of these wild orange-trees, full at once of glossy leaves and delightfully fragrant flowers and golden fruit, waiting the gardener's skilful hand to graft and pluck the delicious fruit of the improved varieties.

The Beurré Bosc and Paradise d'Automne Pears. — Here are two of the finest of pears which have been cultivated for years, with only the vaguest notions of where they were born, if, indeed, they were not "only growed." I do not see how anybody can be around among pear-trees without contracting something very like a personal friendship for them, and wishing to know their history: and I am very glad to get so much new information about these two sister pears, or rather sister and brother; for, while the Bosc has a feminine roundness, the Paradise, in its greater irregularity, reminds of masculine ruggedness.

"Let every man own his garden," and cultivate it too, and learn to love the fruits and flowers which he has tended: yes, and the vegetables too; for, as Hawthorne says, "the hugest pleasure is reserved until we behold these vegetable children of ours smoking on the table, and, like Saturn, make a meal of them." The title of this article furnishes a text from which the writer discourses, not in the sentimental style, on the blessings of home, but in a statement of facts which will be new to most readers, and which set forth in a novel and most forcible manner the difference between a home and a mere house, — a difference which many individuals, and indeed whole nations, have no idea of.

The short notice of the *Celastrus scandens* is as true as any thing that ever was written; and much more might have been said. Though the small greenish-white flowers are inconspicuous, they add much to the beauty of the plant in early summer; and there is no more beautiful foliage than that of a well-grown plant. The clusters of berries, as well as the berries themselves, are much increased in size by cultivation: but, in transplating vines from the wood, care must be taken to select fruitful ones; for some, as I have found to my sorrow, are barren. If this vine were only brought from Jericho or Madagascar, we should hear no end of praises of its beauty.

The Story of Vineland. — Here, now, is a village "with all the modern improvements." Our old country villages are among the most charming places in the world; but why should we not add to their charms all that an experience of two centuries and a half has taught us? "That is just what we are doing," you answer. Yes; but how much more encouraging to put new ideas in practice when we can start *de novo* with all the laws and regulations in our favor, instead of conflicting with our new notions! How could we demonstrate the possibility of saving the vast outlay for building and repairing fences in a place where cows and pigs had run at large from time immemorial?

And we, too, ask, What of the future? Of course, there have not been wanting prophets of evil omen who informed us that the prosperity of Vineland could not be of long continuance; that the soil would not hold out long; and so on. But, however that may be (though I think there are too many persevering Yankees there to fail), there is no doubt that Vineland will do a good work by showing what can be effected in a community engaging in the same pursuit, and shaping all their institutions to accomplish it in the best manner. Such a place as Vineland, where everybody grows fruit and nobody has fences, has a work to do in correcting the loose notions which prevail everywhere else that I know of in regard to property in fruit.

I hope, Mr. Editor, all your readers will read and ponder the article on "Pure Seeds." Here we have the facts about the quantity of weed-seed mixed with grass and clover; and truly they are startling. Fifty thousand weed-seeds in a single pint of clover! Think of sowing such stuff as that on your lawns! I am glad you have published the laws proposed in England; for they may serve as a hint to our law-makers here to give us some protection, of which there is certainly need enough. But let us not rely too much on laws; for we have the power in our own hands if we choose to use it, though laws may be a useful assistance. Let us all resolve from this day forward that we will never buy a single ounce of seed that we suspect to be impure or spurious or that has lost its vitality, and that we will never purchase but of a reputable dealer, and our seedsmen will soon find their account in selling good seed, and learn the value of a good name. Such ones there are now: find them out, and buy of them.

The beautiful cut of the variegated Abutilon will be interesting to all who saw Mr. Hunnewell's specimen-plant (which received a premium from the Massachusetts Horticultural Society), and, indeed, to those who did not.

I like the article on "GardenThorns:" for I do not know of any more beautiful shrubs than the double white hawthorn, with its little rosettes of flowers, and glossy, beautifully-cut leaves; or the cockspur-thorn, with its still more glossy foliage, changing to the richest colors in autumn.

What shall I say of the Poire de l'Assumption? Is this the pear which we have been looking for to extend the season of *large* pears (already advanced one step by the Clapp's Favorite) another step forward? It looks to me like it; and I do not wonder that it has created so much excitement in Europe.

Bismarck.

Address before the Lake-Shore Grape-Growers' Association. — The following is the address of G. C. Huntington, Esq., referred to by Dr. Warder, in his article on "Meteorology in Horticulture," in a previous page of this number of the Journal: —

"The tables given below will show the mean temperature, rain, cloudiness, and sunshine for six months — say May to October, both inclusive — for the last ten years; also the date when grapes come into bloom. This does not occur in this locality before the twentieth day of June; and, some seasons, it has been several days later. We may find that a few days' delay in coming into blossom may have a very important bearing on the future crop; and since the date of blossoming is determined, in a great measure, by the temperature of the month of May, I include that month as properly belonging to the grape-growing season. I have not included November, for the reason that all danger from rot is past before that date, although the harvest may not be completed until two or three weeks later.

"The tables are more extended than I could wish; but any thing short of this would be of little use. It is not enough for us to know that there were a certain number of rainy days in the aggregate during the season, or that a certain number of inches of rain fell during that time, or that there was more or less sunshine in the aggregate. If in any season there is found to be any unusual deviation from the ordinary course of things, it is all-important that we know at what particular time during the season this occurred. A cold north-easterly rain-storm just at the time when grapes are in blossom might be the cause of very serious damage to the expected crop by preventing fructification, as was the case two years since. The same storm occurring at any other time during the season might be perfectly harmless. On the other hand, one week of warm, bright sunshine at the time of blossoming might prove of greater benefit to the crop than twice the amount at any other time during the year.

"I am strongly inclined to the belief, that the particular state of the weather during the latter half of June exercises a very decided influence, be it good or bad, on the coming crop. Every practical grape-grower must have observed, that, if the weather is warm and bright at the critical time, his grapes come into blossom at once and altogether, and, in the course of one or two days, are all out of blow, and the grapes set. They will ripen much more uniformly than when, owing to cold and wet weather, they are a week in completing this process. In the latter case, those which set last will never catch up, but will be straggling behind all the season, and he will have a great many green grapes to pick from his clusters when harvesting. We know, that, throughout the whole domain of Nature, very much depends upon getting a good start in the world. No person, animal, or plant, brought into the world under very unfavorable circumstances, either from deficient vitality, predisposition to disease, or other causes, can ever expect to enjoy the same degree of health, or the same length of days, as when life is commenced under conditions directly the reverse, every thing being right. The results given in the tables are not compiled from data collected from different sources; but every figure is taken from my manuscript journal, in which, three times every day for ten years, a full record has been made

at the hours of seven A.M., two P.M., and nine P.M., not only of the matters here made use of, but also of atmospheric pressure, force and direction of wind, and all observed casual phenomena ; so that, should it ever be necessary to pursue this subject more into detail, we have ample data for doing so.

TABLE NO. I.

"Monthly and aggregate mean temperature for the months named, from 1859 to 1868, at Kelley's Island, O. : —

Year	May	June	July	August	September . .	October . . .	Means of six months . .
1859..	60.00	64.47	73.23	72.14	62.27	49.87	63.66 deg.
1860..	61.64	68.33	70.69	70.72	61.26	53.40	64.31
1861..	53.28	68.43	70.69	71.82	65 28	55.42	64.15
1862..	56.83	64.80	73.14	73.39	67.09	54.37	64.94
1863..	59.92	66.51	71.42	72.16	62 46	50.14	63.77
1864..	59 95	69.71	76.17	75.00	64.41	51.23	66.06
1865..	59.26	74.53	71.46	71.88	72.97	53.50	67.26
1866..	56.27	69 11	77.57	69.03	62.98	56.18	65.19
1867..	52.44	72.39	74.02	74.92	66.82	56.65	66.21
1868..	55.94	68.19	81.72	73.03	63.89	50.83	65.60
Means	57.53	68.65	74.01	72.41	64.94	53.16	65.11½

"It will be observed, that, so far as temperature is concerned, there is but a slight difference in the means of any one year from the means of the whole period ; consequently we cannot charge temperatures as being the cause of our troubles.

TABLE NO. II.

"Showing the number of days on which rain fell, and the amount of water in inches and hundredths during the months named, for the years 1859 to 1868, both inclusive, — a period of ten years, — at Kelley's Island : —

	—May—		—June—		—July—		—Aug.—		—Sept.—		—Oct.—		Aggregate six months.	
Year	No. of days . .	Amount . .	No. of days . .	Amount . .	No. of days . .	Amount . .	No. of days . .	Amount . .	No. of days . .	Amount . .	No. of days . .	Amount . .	No. of days . .	Amount . .
1859..	9	....	9	1.69	2	0.79	5	2.04	5	2.97	8	1.33	38	8.82
1860..	8	1.24	6	1.08	9	5.20	8	2.62	7	2.09	8	2.93	46	15.16
1861..	10	2.13	6	1.32	9	3.69	10	4.34	7	2.52	10	2.09	52	16.09
1862..	9	4.19	11	4.21	13	5.06	6	1.84	7	2.14	9	2.50	55	19.94
1863..	5	2.12	8	3.00	7	1.43	8	1.74	5	1.29	10	2.84	43	12.42
1864..	11	4.04	3	1.77	8	4.81	7	3.20	10	4.89	10	3.20	49	21.91
1865..	9	2.26	9	2.77	14	4.54	9	1.75	11	8.23	7	3.11	59	22.86
1866..	8	3.77	14	7.42	9	4.97	12	2.29	15	7.15	8	1.84	66	27.44
1867..	12	5.08	5	1.19	10	3.63	2	0.14	5	0.84	6	1.68	40	12.56
1868..	5	2.86	9	5.98	2	0.53	5	3.78	9	3.29	3	0.78	33	17.22
Means	8.6	3.10	8.0	3.04	8.3	3.46	7.2	2.37	8.1	3.54	7.9	2.23	48.10	17.44

TABLE NO. III.

"Showing the amount of cloudiness in tenths and hundredths at Kelley's Island for the months named, for the last ten years : —

Year	May	June	July	August	September	October	Means of six months.
1859	3.86	4.34	2.88	2.93	4.95	5.00	3 99
1860	4.10	3.67	4.50	3.63	4.68	5 71	4 38
1861	4.43	3.54	4.21	3.69	4.59	4.81	4 21
1862	3.62	4.80	3.15	3.71	4.01	5.49	4.13
1863	4.13	3.58	4.41	3.29	4.23	5 99	4 27
1864	4.69	2.94	3.22	3.71	5.20	6.66	4.40
1865	4.92	4.21	5.17	4.16	4.52	5.38	4.73
1866	4.16	4.90	4 54	5.72	6.04	5.85	5.20
1867	6.18	4.28	4 38	3.29	3.38	4 91	4.39
1868	5.65	4.48	3.01	4.35	6.05	5.61	4 86
Means	4.57	4.07	3.95	3.85	4.76	5 54	4 46

"In explanation of the above table, it will be understood, that, in making the estimate for cloudiness, the heavens are supposed to be divided into tenths. In the journal entries, 0 signifies perfectly clear, and 10 signifies completely overcast. The smallest amount of cloudiness is counted 1, and the intermediate figures between one and ten show the different gradations between these extremes in tenths ; consequently the amount of sunshine is found by subtracting the figure indicating cloudiness from 10. Thus the mean cloudiness for six months is found to be, by the table, 4.46 : this, subtracted from 10, leaves 5.54 as the mean amount of sunshine. In estimating cloudiness, all the different varieties of clouds, from the lightest cirrus to the darkest nimbus, are included, and are particularly specified in the journal entry ; but it would swell the tables inordinately to name them all separately.

"A critical examination of table No. II. will show several striking coincidences between the rain-fall in June in each year and the state of the grape-crop in the same year. It will be seen that the mean rain-fall for the month of June, for ten years, was three inches and four hundredths (3.04). The rain-fall in June, 1859, was but little more than one-half this average ; and, in June 1860 and 1861, it was less than one-half this average. In each of these three years, the grape-crop was very good, — not rot enough to be noticeable. In June, 1862, the rain-fall was 4.69 inches ; which is nearly fifty per cent greater than the average for ten years. It was in that year (1862) that the rot first made its appearance. The crop in some vineyards was nearly destroyed ; in others, the damage was comparatively light. Taking the island as a whole, the yield was estimated at about half a crop. From 1862 to 1866, the rain-fall in June did not in either of these years come up to the June average. In each of these years, — say 1863, 1864, and 1865, — the grape-crop was very good : there was some rot, but not enough to injure the crop materially ; and our grape-growers generally had settled down into

the belief that the grape-crop was, after all, the safest crop which could be raised. It might occasionally fail; so did wheat, corn, potatoes, and every other field-crop: but, on the whole, grapes were altogether the most remunerative. In 1866, the rain-fall in June was seven inches and forty-two hundredths (7.42), — considerably more than *double* the average for June. In this year, too, the grape-crop was very badly injured, the aggregate yield not being more than one-fourth to one-third a crop. This brought a good deal of discouragement to many grape-men. Some were almost inclined to believe that the crop would no longer be remunerative.

"The next year brought a change for the better, and revived the drooping spirits of the despondent. The fall of rain in June in that year (1867) was but one inch and nineteen-hundredths (1.19), or considerably less than one-half the June average. The crop that year, although somewhat diminished in quantity, was the best in quality we have ever had; and the quantity, although not equal to some previous years, was probably as large as is consistent with thorough ripening. The next year (1868) brought another change, and well-nigh brought discouragement to many who had hitherto been hopeful. The rain-fall in June that year was five inches and ninety-eight hundredths (5.98); lacking but two one-hundredths of being double the June average. As to the crop that year, the result is fresh in the minds of all interested. It is sufficient to say, that, in this locality, it came the nearest to a failure of any thing we have hitherto known. Now, can all these things be called coincidences merely? We see, during a period of ten years, a certain sequence of events, —a good grape-crop following a dry June, and a poor crop following a wet June. There has not been a single exception during the whole period. May we not therefore, without presumption, begin to look upon these sequences not merely as coincidences, but, to a certain extent, as *cause* and *effect?* They would certainly seem to sustain the opinion previously hazarded, that a great deal more depended on the *when* than on the *how much* rain fell during the grape-growing season. We do not wish to be understood as advancing this as a theory which will wholly account for the rot in grapes: far from it. But we do think it is a step in the right direction. It may prove one of the causes: and, by continued vigilance and oft-repeated observations, we may in time discover another and still another of these sequences, and in the course of time get to understand the laws governing these things; then we may possibly be able to apply the proper remedy.

"We will now proceed to show, that, in the years when our grapes have suffered from excessive rains in June, these rains have occurred within the ten days named, — say between the 18th and 28th of the month. Thus, in June, 1862, the entire rain-fall for the month was 4.21 inches; of which, 2.82 inches, or more than one half, fell between the 17th and 28th of the month. Again: in 1866, the whole amount in June was 7.42 inches; and, of this amount, 6.41 inches, or more than five-sixths of the whole amount, fell between the 17th and 27th of the month.

"Again: in 1868, the whole amount in June was 5.98 inches; and, of this, 3.71 inches, or more than five-eighths, fell between the 18th and the close of the month."

Editors of Tilton's "Journal of Horticulture:"—

A FEW years ago, I noticed that a part of my currants, soon after they began to ripen, suddenly shrivelled and dried up. Year by year, the fruit became more affected in this way; and, last year, the *entire crop*, where formerly bushels were gathered, was lost. The best cultivation and close pruning made no difference; and those partially shaded, and those fully exposed to the sun, suffered alike. None of the books that I had gave me any light on the subject. I inquired of the editor of one of the most popular agricultural papers, and was gravely told, that, if I should examine, I should fine a minute worm in each affected currant. Last fall, I had the bushes dug up and burned as worthless. On breaking some of the twigs, the centre, or pith, appeared as if it had been traversed longitudinally by a worm or borer; the channel or cavity being blackened. I immediately concluded it to be the work of some new insect enemy. I find, on inquiry, that the evil is wide-spread here; almost every one to whom I have mentioned the subject saying their currants were affected in like manner. I found, in one case, the bushes had been so perforated that they had broken badly. Can you tell us any thing about this plague? I have *conjectured*, that a moth or beetle deposits its eggs in the young shoots soon after they begin to grow, and that the larvæ, or grubs, when hatched, eat their way downward in the centre, or pith, of the shoot, and finally emerge by a hole on the side (as several such holes were found). On the shoots thus bored, the fruit perishes before ripening, and the shoots break easily. But I have little knowledge of entomology, and this is merely conjecture.

In this town of twelve thousand people, there are few currants, I think, unaffected as above mentioned.

If this state of things continues, we can raise no currants. Enlighten us, if you can. *U.*

ADRIAN, MICH., May 26, 1869.

[Our correspondent is only one of many who mourn over the destruction caused by the currant-borer, which has long been known, though its ravages have greatly increased within the last few years. The conclusions at which "U." has arrived are correct as far as they go; and we add such further information as we have been able to collect.

There are several species, of which the following are most common: — the American Currant-Borer (*Prenocerus supernotatus*). "This is a small, cylindrical, white worm, destitute of feet, and with a small chestnut-brown head and black jaws; passing its pupa state in the stalks, and, in the latter part of May, changing to a small, slender, long-horned beetle, of a black color, edged with chestnut-brown: its wing-covers each with two small, gray spots forward of their middle, and a white, crescent-shaped one towards their tips." — *Dr. Fitch.*

The European Currant-Borer (*Trochilium tipuliforme*) is most common in the Eastern States, having been received here from Europe. Imported bushes generally contain more or less of these pests. The moth is described by Dr. Fitch as follows: "A small moth, having some resemblance to a wasp; its wings being clear and glossy, the fore pair opaque, yellowish at the tips, with a black

margin, and band near the middle ; and the abdomen black, with three yellow bands situated one upon each alternate segment ; width 0.65 to 0.85."

Dr. Harris says of the latter insect, " In Europe, there is a species of Ægeria, named by Linnæus *tipuliformis*, which has long been known to inhabit the stems of the currant-bush. This, or an insect closely resembling it, is far too common in America in the cultivated currant, with which it may have been introduced from Europe. The caterpillars are produced from eggs laid singly, near the buds : when hatched, they penetrate the stem to the pith, which they devour, and thus form a burrow of several inches in length in the interior of the stem. As the borer increases in size, it enlarges the hole communicating with its burrow, to admit of the more ready passage of its castings, and to afford it the means of escape when it is transformed to a moth. The inferior size of the fruit affords an indication of the operations of the borers ; and the perforated stems frequently break off at the part affected, or, if of sufficient size still to support the weight of the foliage and fruit, they soon become sickly, and finally die. In some gardens, nearly every currant-bush has been attacked by these borers ; and instances are known to me wherein all attempts to raise currant-bushes from cuttings have been baffled during the second or third year of the growth of the plants by the ravages of these insects. They complete their transformations, and appear in the moth state, about the middle of June.

" The moth is of blue-black color ; its wings are transparent, but veined and fringed with black, and across the tips of the anterior pair there is a broad band, which is more or less tinged with copper-color ; the under side of the feelers, the collar, the edges of the shoulder-covers, and three very narrow rings on the abdomen, are golden yellow. The wings expand three-quarters of an inch, or a little more."

The *Trochilium caudatum* of Harris is another species infesting the native wild currant, and resembling somewhat the European species.

The only sure way of getting rid of these insects is to find the shoots containing them, cut them out, and destroy the worm or chrysalis. This must be done when the shoots are bare of leaves. The chrysalis is from three-eighths to half an inch long, of a light-brown color. The shoots containing them, or the larvæ, will be of a brown color, or have a slightly wilted appearance, and sometimes the bark and wood will be left so thin that they will collapse when pinched in the fingers. If the shoots are very vigorous, no difference in the color can be observed ; but, by close examination, the hole where the worm entered will be seen. The moths, which appear about the middle of June, get somewhat torpid in the cool of the day, when they may be taken on the under side of the leaves. By setting pans filled with sweet, sticky paste, or wide-mouthed bottles partly filled with sweetened water, great numbers may be captured ; but this course destroys friends as well as enemies. In making cuttings, they should be carefully examined for borers ; and, where the pest prevails, we recommend a concerted effort to destroy it by digging up and burning the old bushes, and planting new bushes or cuttings.]

Raspberries and Blackberries in New England. — Considerable interest has been awakened of late in these popular fruits by the introduction of new varieties, of great merit as regards size and productiveness. Owing to the labor attending the cultivation of the older kinds, requiring protection in winter, they were fast disappearing from our markets, and the prices reached a higher figure than ever before, on account of their scarcity. We were greatly pleased with the introduction of such varieties as Kittatinny and Wilson's Early; still, those two varieties have not proven sufficiently hardy to stand our winters without protection; that disadvantage being still greater with the older kinds of raspberries, they being not only tender in winter, but only adapted to certain soils and locations, the foliage getting badly scorched in summer.

Our experience with them was not very satisfactory. We set out, four years ago, some three thousand of that then popular variety, the Franconia, and, our soil being of a rather light nature, we gradually, in that short space of time, lost nearly three-fourths of them; the balance, in the mean while, showing signs of deterioration. We thought then we should give up the cultivation of raspberries altogether, as the land was not adapted for them.

About two years ago, we noticed in the garden of a neighbor, in a soil similar to our own, the Clarke Raspberry, and were surprised at the apparent vigor of the plant. We secured some with a view of propagating them for trial. The young plants were planted out the ensuing season, and made a vigorous growth; some of the canes, in the fall, measuring three-quarters of an inch in diameter. We left about fifty plants exposed to test its hardiness, and, with the thermometer at twenty-six degrees below zero, they stood perfectly uninjured, all starting the next season to the very ends.

In consequence, we planted out, last spring, a large quantity, fully persuaded of the great value of that variety, especially for market purposes.

To return to blackberries: our attention last season was called to the introduction of the thornless varieties; one originating in Western New York, and the other in Massachusetts, called the "Wachuset," from the place of origin. We took steps to secure plants of each variety, well aware of the importance of securing varieties free of thorns, which are drawbacks to their cultivation. As we possess both varieties, we found them, on close examination, to be not quite thornless; some small thorns, few and far between, showing themselves on the young growth, while lost on the canes; rendering them as harmless as raspberries.

We are not able as yet to say any thing of the hardiness of the New-York variety with us; while the Massachusetts or Wachuset has produced large crops of fruit for several years, without any protection, in open field; proving it to be, at any rate, perfectly hardy.

So far, we have every reason to think the Clarke Raspberry and Wachuset Blackberry well adapted to cultivation in the New-England States, and can confidently recommend them as such.

To terminate our article on blackberries we would state a curious fact, which has come lately to our knowledge.

A neighbor of ours who cultivates blackberries had his vines somewhat

mildewed. His children, in picking the fruit, were, as is usual, more or less scratched by the thorns: instead of those scratches healing in a few days, as they generally do, they assumed a very malignant form, as if poisoned by dogwood, showing plainly the effect of that fungus in contact with the blood.

Denys Zirngiebel.

Care of Newly-planted Trees. — Many tree-planters think, that, when the roots of a tree are once in the ground, the work is done; when, in fact, it is only begun. After the tree is carefully planted, it should be mulched with leaves, straw, tan, or whatever similar material is most accessible; not so thick as to exclude the air, but sufficiently to retain the moisture in the soil; for, although there may be plenty of rain early in the season, the probability is, that there will be a drought, more or less severe, before the end. The top should be shortened to correspond with the quantity of roots lost in digging up; and, in doing this, cut to a good bud, and one so placed that the shoot which grows from it shall improve the shape of the tree. This will generally be on the outside of the shoot. As the prevailing winds in this country are from the west, it may be well to leave the limbs on this side a little longer to assist in balancing the top. Make a neat cut, close, but not too close, to the bud, and, if you are very particular, cover the cut with grafting-wax to prevent evaporation. The cutting-back should be done as early as possible. If in an exposed situation, it must be staked, or otherwise prevented from shaking by the wind. It is sometimes difficult to drive a stake firmly in the soil just loosened by planting the tree, and, the larger the tree, the greater the leverage on the stake: so we prefer to steady the tree by placing large stones on the ground around it, which also assist to keep the ground moist. But for very large trees, we have found the best way to be to fasten four guys near the top, first wrapping a cloth around to prevent chafing, and making the lower ends fast to a short stake driven in at some distance from the tree. The lines need not be large; one of two or three ropeyarns twisted together will fasten a tree twenty-five feet high so firmly, that nothing but a hurricane can shake it. The further care will be mainly in destroying insects, and pinching out any useless shoots as soon as they start, and the ends of those which grow so much stronger than others as to impair the balance of the tree.

A grape-grower in California states that he sent fourteen boxes of grapes, of fifty pounds each, all choice fruit, to San Francisco, and he received for the lot only seven dollars; while said fruit was sold at retail at twenty-five cents a pound.

Destroying the Curculio. — Mr. E. Cable of Cleveland, O., has protected his plums from the curculio by scattering the dry sandy loam of his orchard among and through the branches. He employed boys, who were provided with a tin cup fastened on a pole about ten feet long, to throw the soil among the trees. The work was continued from the time of setting the fruit until it was half grown, and was found the most economical method of preserving the fruit from these insects.

Tremendous Storm. — We have to record the occurrence, on the 8th of September, of the most terrific hurricane known since the great gale of Sept. 23, 1815. Though of shorter duration than that memorable storm, it is thought to have been even more violent. The day was sultry and oppressive in the extreme until about half-past four in the afternoon, when the storm commenced, blowing with the utmost fury from the south-east, afterwards changing to the south-west, and accompanied with torrents of rain, reminding one of the accounts given of tropical hurricanes. Trees and buildings, especially churches, were prostrated; and the damage to the fruit-crop was unprecedented, as, during similar previous storms, the cultivation of fruit was far less extensive. We visited Mr. Wilder's grounds the next morning, and found about four hundred bushels of pears on the ground; and probably Mr. Hovey had about the same quantity, having had eight men at work picking up from Wednesday to Saturday. The storm extended from Long-Island Sound to the Penobscot River, but only a small distance inland; and will long be memorable as the great gale of 1869.

An Imposition on the Public. —Why is it that no new fruit can be sent out by a person who controls the entire stock but forthwith dishonest men put out advertisements offering to supply the same, though they have not a single plant? All who are engaged in horticulture must be acquainted with such instances; and the evil is increasing to such an extent, that purchasers of new productions must exercise the greatest circumspection in sending their orders. The course alluded to is an imposition, both on the owners of new fruits and on the public, which cannot be too strongly condemned; and we repeat, that the best way to check it is to buy only from what they know to be trustworthy sources. But there are people who love to be humbugged, and will always save five or ten per cent on the cost of a plant, no matter whom they buy of, and, in the sequel, find they have lost not only their money, but years of time more valuable than money.

Fresh Grapes from California were received in Boston Sept. 13. They are of the variety known as the Mission, a black grape with a loose bunch, having very large shoulders; berries small, with sprightly flavor; the skin quite sweet. They were retailed at thirty-two cents per pound.

Pear-Growing in Delaware. — Against my own judgment, I left a few pear-trees in variety without cultivation. They have not done half as well as when I cultivate, and the fruit will only average about one-third the size. I have an orchard of sixteen thousand pear-trees on my farm in Newark, Del., one-half standards and one-half dwarfs, four, five, and six years in orchard this spring. My Bartletts and Belle Lucratives are producing from a half-peck up to a bushel to the tree. Fire-blight is the great drawback to the planting of pear-orchards in this and other sections. I have not lost, I believe, one tree by fire-blight in my orchard of ten thousand trees. The seventeen-year locusts destroyed some for me last summer. I should have been pleased for some of your Boston pear-men to have seen my orchard in fruit.

Yours truly, *Randolph Peters.*

Wilmington, Del., Aug. 23, 1869.

Arboretum of the Department of Agriculture. — We are glad to know that this collection of trees and shrubs, mentioned by Mr. Wilder in his "Southern Horticultural Trip" in our March number, is making rapid progress. It will embrace a single specimen of every tree and shrub that will exist in this climate; and, in their disposal, a twofold arrangement has been kept in view, — that of a strictly botanical classification of families, species, and varieties, and the production of a high degree of beauty in landscape-gardening. This has necessarily involved a vast amount of time and study. The botany of all nations had to be ransacked in order to cull out every suitable plant and tree. The *fasciculi* for this arrangement covers over two hundred pages of closely-written foolscap. As a collection of hardy plants, it will be unequalled by any thing in existence at the present time. To combine a strictly scientific arrangement with artistic effect required no ordinary amount of skill and foresight; years, however, will be required before the ultimate effects will be fully produced so far as the development of individual forms and combinations of growth are concerned.

Much has already been accomplished in the planting of trees and shrubbery. With the completion of the planting of the present season, about three-fourths of the entire collection will be set out. Many of the plants, especially those of our Western States and Territories, will be difficult to procure; not being in cultivation as yet, they are not to be found in ordinary nurseries. Some of the family groups are already completed: the elms, for instance, number over fifty specimens, all distinct. Of ashes there are forty, of willows over a hundred, oaks seventy, maples about fifty, and others are equally well represented. The pines and other evergreen species are now being planted.

The possession of this collection will enable the department to answer many important questions with reference to the value of trees for wood, rapidity of growth, &c. (a point of great importance in the treeless tracts in the West), and the most suitable plants for live fences, and other subjects of equal prominence.

To the artist it will be of great attraction. The various forms of growth, the individual peculiarities of foliage and combinations of forms, will afford a delightful study; and the mere visitor will be arrested by forms and beauties of foliage such as can rarely be found available; and the student in botany cannot possibly find a source of elementary knowledge at all comparable with being brought face to face with the living plant.

The immediate direction of the arboretum is in charge of Mr. William Saunders, than whom no man is more competent to select and arrange the trees and shrubs, both botanically, and with a view to picturesque effect. Besides the arboretum, Commissioner Capron's plans include a collection of all plants whose products are used in medicine, to be arranged according to a strictly botanical classification; and similarly-arranged collections of all plants grown for their textile qualities, for dyes, and other economical purposes. The ground immediately in front of the building is formed into an architectural flower-garden, intended to be embellished with balustrades, vases, and other decorations; thus affording an agreeable transition from the building to the grounds. A design for a series of hot-houses and greenhouses, of much architectural beauty, has been prepared.

Fruit in Portland, Me. — The Jenny Lind, Bartlett, Russell's Prolific, and Triomphe de Gand, have all done remarkably well the past season, giving a full supply of excellent fruit up to the last of July. The Bartlett Strawberry was received from Dr. Grant several years since, and resembles, and is claimed by some to be identical with, the Boston Pine. It bears well, and is a good berry, and follows the Jenny Lind in time of ripening; so that with the Jenny Lind, Bartlett, Russell's Prolific (which I find an enormous bearer, far exceeding Wilson's Albany), Triomphe de Gand, and La Constante, I had a supply from my garden over four weeks the past season.

The Dorchester Blackberry does remarkably well with me, and will grow where it is shady, where neither currants nor raspberries would. Of some eight or ten varieties of raspberries which I have cultivated for several years past, I prefer the Vice-President French, originated by Dr. Brinckle of Philadelphia. The crop of pears will be rather light this season, and, from present appearances, inferior in size and quality.

My gardens are small, crowded, and shaded; so that my experience may not be like others whose grounds may be more open. *B. G.*

Aug. 28, 1869.

Fruits in Missouri. — Crops in this vicinity are generally good. Fruit-crops excellent, except peaches (they were winter-killed): but apples, pears, and grapes are fine; though the Catawba Grape has generally rotted, except in favorable localities. Hartford, Concord, Delaware, and several other varieties, such as Clinton and Isabella, have done well. In some localities, they have rotted slightly; but they will yield a good crop. *H. M. V.*

St. Joseph, Mo., Aug. 30, 1869.

Effect of Drainage. — Since the Haarlem Lake in Holland has been drained, the average temperature of the region has been increased one degree Fahrenheit in summer, and become one degree colder in winter. Haarlem Lake has yielded forty-eight thousand acres of arable land.

Rain at the West. — The rain-fall at Muscatine, Io., was, in June, 9.15 inches; July, 8.55 inches; August, up to the 28th, 5.35 inches. *S. Foster.*

Black Raspberries, to the amount of sixteen thousand six hundred bushels, were received in Cincinnati in one week in July.

The Cranberry-Crop. — New-Jersey cranberries are worth two and a half millions this year.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

Summer-Pinching, or Stopping the Growing-Shoots of Fruit-Trees. — This all-important operation in fruit-cultivation now requires attention. It is a practice which has often been advocated in your columns in a very clear and able manner by Mr. Rivers and others ; and my only reason or excuse for adverting to it here is, that frequently in the pressure of other work, at this season, it is apt to be delayed and forgotten until too late. Trees grow so fast at this season, that, if not seen to for a week or so, one is astounded at the progress they have made ; and then the knife has to be used so unmercifully, that no wonder the trees suffer through it. And again : a good thing cannot be too often repeated. It is well, I think, to give frequent reminders of all important operations in their due season in horticultural journals.

The time for pinching the growing shoots of fruit-trees — apples, pears, plums, cherries, apricots, and I may include peaches, although these last require somewhat special treatment, excepting in the case of orchard-house, bush, and pyramid trees — is now at hand ; and, if success is expected to attend the operation, constant supervision is now necessary.

The advantages of a correct system of pinching are obvious to every one. The work is easy and simple ; and, if done now, little or no pruning will be required in winter. By closely following it up, the vigor of the tree may be moderated and regulated, so as to make every part fruitful alike ; and, with few exceptions, the most stubborn trees may be made fruitful by this simple operation. All cannot be treated exactly alike. Some are of more robust growth than others, and consequently require a little more liberty of action ; and a more frequent application of the process is necessary than with slower-growing trees. No exact rule of procedure can, therefore, well be laid down : very much must necessarily be left to the operator's discretion. The operation should be performed when the shoots are young and tender, when they will readily snap off with the fingers.

All formally-trained trees, whether on walls or in the open quarter, must be kept in trim by the use of the thumb and finger at all events ; and the principal rule to bear in mind is this : Pinch the strongest shoots first, and only these, which are, in general, situated at the top of the tree ; then, in the course of four or five days, repeat the operation with the next strongest lower down, and so on in succession until all have been done ; and then begin at the top again, and so on as required. Never denude the tree of a great quantity of foliage at any one time, as, by so doing, a check is given which might prove injurious. Pinch the most vigorous portions of the tree the hardest, and allow the weaker to grow a little longer. Thus the shoots at the top of a pear-tree on a wall should be pinched to two or three eyes, while at the bottom of the wall they should be allowed five or six. This should be the rule ; and, by adopting it, uniformity of action throughout the tree will be secured, and a regular crop of fruit.

How to pack Flowers for a Journey. — The enclosed sketches represent two tin boxes for the safe conveyance of cut-flowers. It is rather vexing to see flowers mauled in the way we sometimes do see them, after the greatest care has been bestowed upon their cultivation. However, it has become such a worn-out subject as not to require any further comment; and, with the hope that my contrivances may have a little novelty and usefulness in them, I will proceed to describe them. Fig. 1 is a round tin box, ten inches by eight: the

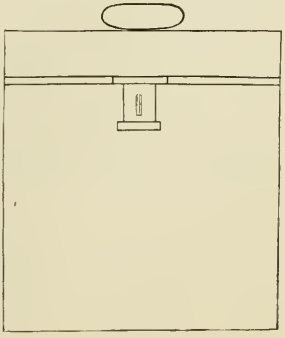


FIG. 1.

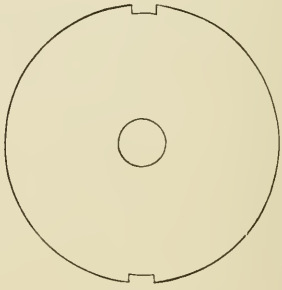


FIG. 2.

lid fits over, and can be secured by a peg or padlock. There are six small holes in a circle round the handle on the lid. The tray, Fig. 2, has an aperture in its centre for the stem of a bouquet to pass through. There are two upright pieces of tin an inch wide soldered on the rim, and long enough to press against the

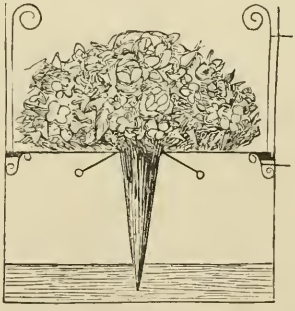


FIG. 3.

lid, as shown at A, in Fig. 3, after the bouquet has been fixed in the tray by means of the two pins shown underneath. These upright pieces serve as handles to place it in the box upon the brackets, as at B; and it is quite immovable when the lid is made fast. I put a little water in, and so keep the stems moist in their compartment, and the flowers dry in theirs. I have on several occasions sent flowers so packed from hence to Hamburg, which have arrived, to all appearance, as fresh as when gathered. It is a useful box for small articles of apparel or refreshment.

Fig. 4 is a box for camellias. This need not be more than four or five inches deep. Fig. 5 represents the tray within the box: the tin uprights at A press

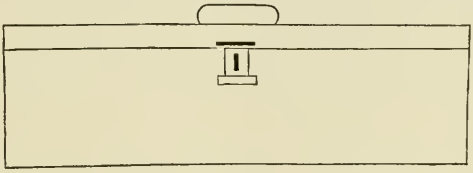


FIG. 4.

FIG. 5.

against the lid, and the tray is held down quite firm by it. Fig. 6 is the tray, which is pierced like a colander, through which is laced flat elastic braid. I lift the braid with a peg, which is larger than the flower-stem, or with a piece of bent wire: the stems being introduced, the elastic holds them quite fast. By

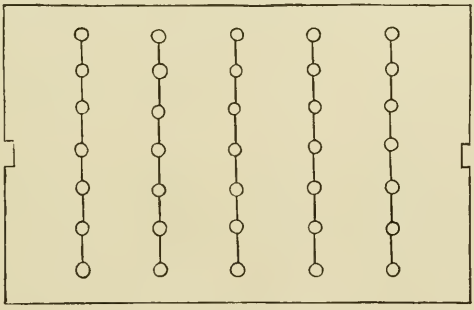


FIG. 6.

first filling the tray, and then placing it within the box, a great deal of unnecessary fumbling is avoided. I generally pillow each flower with wadding. A deeper box might be used, and tray upon tray. The boxes are japanned outside, and painted inside. Price 3*s.* and 4*s.* 6*d.* — *G. Dunford, Gardener, Manor House, Long Eaton, Derbyshire, in Gardener's Magazine.*

A Selection of Fifty Cool Orchids.—Barkeria Lindleyanum, B. Skinneri, Brassavola glauca, Brassia verrucosa, Cattleya citrina (this does best fastened to a block, and suspended with the foliage downwards, as it grows in its native habitat on the under side of branches of large trees), C. Mossiæ, C. Trianœi, Cœlogyne cristata, C. speciosa, Cymbidium giganteum, Cypripedium insigne, C. venustum, Dendrobium chrysanthemum, D. heterocarpum, D. nobile, D. specio-

sum, Epidendrum atropurpureum, E. crubescens, E. macrochilum, E. vitellinum, Lælia acuminata, L. albida, L. autumnalis, L. majalis, L. superbiens, Lycaste aromatica, L. cruenta, L. Skinneri, Maxillaria Harrisonii, Odontoglossum Cervantesii, O. citrosmum, O. grande, O. Insleayii, O. maculatum, O. nebulosum, O. pulchellum, O. Rossii, Oncidium crispum, O. flexuosum, O. leucochilum, O. pulvinatum, Pleoine maculata, Sophronitis cernua, S. grandiflora, Stanhopea insignis, S. oculata, S. Wardii, Trichopilia tortilis, Zygopetalum crinitum, Z. Mackayii. — *Floral World.*

A Brilliant Flower-Bed. — Select or make a small isolated bed in some spot fully exposed to the sun, and let it contain fine sandy peat, or fine sandy soil of any other kind; and let it be well drained, of course; and place a few rustic stones round the margin and through the bed, half or more buried in the soil, so that the whole will be elevated a little above the grass level. Over the bed, beside the stones, &c., plant a few, a select few, of the best dwarf sedums and saxifrages of the incrusted section; and perhaps, if you are fond of them, a few of the very choicest spring bulbs, — such, for instance, as that little Siberian exquisite *Puschkinia scilloides*, — just to vary the bed a little at all points, and give it unsurpassed charms in spring. But, for the brilliancy and chief beauty, you must have a number of plants of a very beautiful hardy perennial, *Calandrinia umbellata*. Make the groundwork of your bed of these, and put a few good specimens on the little elevations about the highest points and tiny rocks in your little bed. Plant in spring, give a good soaking of water in dry weather, and wait for the result. The *Calandrinia* is a continuously-blooming plant; and when it begins to flower, if well grown, you may expect a display of the purest magenta-colored flowers for many weeks. — *O'Shane, in Floral World.*

Annuals with Red Flowers for Clumping. — The pretty "Rose of Heaven" (*Agrostemma cœli-rosa*) makes a fine clump, sown rather thick: the plant grows a foot high; and there are several varieties entered in seed catalogues, the best being *hybrida flore pleno*, which has double flowers. Crimson candytuft, or *Iberis umbellata*, is a fine annual, which lasts long in bloom if sown in autumn, but will make a good display if sown in March. *Silene armeria*, or Lobel's catchfly, produces abundance of pretty corymbs of rose-colored flowers. *Clarkia elegans* is well known: it thrives best in poor soil, and lasts longer in bloom if sown in autumn; but it may be sown now in any kind of soil, and will in due time make a beautiful display. The double Clarkias are rubbish. *Dianthus chinensis*, the Indian pink, must not be sown in the open border until April, but blooms earlier and finer if sown on a hotbed in March. All the varieties named in catalogues are good, and may be purchased with perfect safety. *Saponaria calabrica* is a lovely little rosy-flowered plant, which flowers all the summer long: it is useful for any bed or border, or even for an edging to a bed; but the flowers are so small, that it produces no effect at a distance. *Silene pendula* makes a charming clump of bright magenta or pink. *Viscaria oculata* is an elegant plant, with rosy flowers: all the varieties of this are good. — *Floral World.*

New Plants. — *Passiflora glauca* (Gard. Chron., 1867, 1070). — Passifloraceæ. An aborescent species from New Grenada, with fine large glaucous-green foliage. The flowers are white, succeeded by medium-sized fruit, which is bright yellow when ripe. Will probably do well in a cool greenhouse.

Cypripedium Stonei, var. *Platynævium* (Gard. Chron., 1867, p. 1118). — Orchidaceæ. A fine variety of this well-known species, with long and beautifully-spotted petals.

Acer Frederici Gulielmi (Rev. Hort., 1867, t. 391). — A beautiful Japanese maple, of a slender growth and spreading habit. The leaves, when young, are of a brownish-red, which changes, when older, to a greenish-red, sometimes streaked with rose and white.

Acer ornatum (Rev. Hort., 1867, 391). — A beautiful deciduous tree, with feathery branches, bearing the leaves on slender petioles. Their divisions are deeply cut, with toothed segments of a dull red, and afterwards becoming greenish-red. It appears to be the same as the plant with the inconveniently lengthy name of *A. palmatum dissectum foliis pinnatifidis roseo-pictis*. Native of Japan.

Clematis Davidiana (Rev. Hort., 1867, 90). — Ranunculaceæ. A desirable and show hardy perennial, growing about two feet and a half high, bearing blue tubulose flowers, which are mostly produced in clusters. The more numerous flowers render it superior to *C. tubulosa*, to which it is allied. Native of China.

Lilium auratum rubrum (Rev. Hort., 1867, 371). — Liliaceæ. A charming variety of this noblest of all lilies, differing from the ordinary form in having the band of golden yellow on each petal exchanged for a similar band of a rosy red.

Lilium pseudo-tigrinum (Rev. Hort., 1867, 411). — A very pretty hardy bulb, quite distinct from *L. tigrinum*, growing about three feet high, with linear leaves, and solitary flowers of a dull red color, dotted with small dark-brown spots.

Rhus Osbecki (Rev. Hort., 1867, 111). — Anacardiaceæ. An elegant shrub, of spreading, branching habit, with smooth bark and large leaves.

Anthurium Geitnerianum (Gartenflora, t. 540). Orontiaceæ. A stove perennial, with dark-green leaves on long petioles, and a spadix, with green leathery spathe, supported on a long scape.

Clerodendron serotinum (Rev. Hort., 1867, 351). —Verbenaceæ. A branched, vigorous-habited greenhouse or half-hardy shrub, suitable for the summer garden. The flowers are sweet-scented, pure white, with an angular rose-colored calyx, and are produced in large panicles a foot or more across.

Oncidium macropus (Gard. Chron., 1868, 125).— Orchidaceæ. The bulbs of this species are similar to *O. macranthum*, and the flowers yellow, with blotches and bars over the surface ; of little value to cultivators.

Oncidium Porrigens (Gard. Chron., 1868, p. 125). — Orchidaceæ. A species of no merit. Sepals and petals brown ; lips cinnamon.

Acacia Ausfeldii (Gartenflora, t. 550). — Leguminosæ. A greenhouse evergreen shrub, with linear phyllodes, and axillary peduncles bearing many-flowered capitules of yellow blossoms. Native of Australia.

Prunus Padum (Neerl. Plant., t. 48). — Rosaceæ. An early-flowering plum, with large semi-double flowers, white, or more or less tinted with rose.

Cratægus Oxyacantha coccinea flore-pleno. — Rosaceæ. A fine sport from the double pink thorn, with crimson flowers.

Codieum (*Croton*) *Veitchianum* (Rev. Hort., 1867, 189). — Euphorbiaceæ. A beautiful stove evergreen shrub, with slightly undulated leaves, which have red footstalks, and when young are green, traversed by a broad band of yellow, which passes with age into rose and carmine-purple; the intensity of these colors increasing as the leaves become older. Introduced by Messrs. Veitch & Sons from the South-Sea Islands.

Dichorisandra musaica (Flore des Serres, t. 1711–12). — Commelynaceæ. This most remarkable stove perennial was exhibited at the International Exhibition of 1866. The leaves are ovate-acute, deep reddish-purple beneath, dark green above, beautifully marked with close broken transverse irregular white lines. The flowers are white and blue.

Hæmadictyon nutans maxima (Flore des Serres, t. 1728). — Apocynaceæ. Distributed under the name of *Echites rubro-venosa.* The dark olive-green surface of the leaf is traversed by red veins. The bright red midrib has a narrow bar of pale bright green on each side, which adds very greatly to its beauty.

Polymnia pyramidalis (Rev. Hort., 1867, 211). — Compositæ. A tall-growing, shrubby perennial, recommended for summer flower-gardening, having been used for this purpose in Paris: it grows ten feet in a season, forms a pyramidal head, bears large cordate leaves, and is decorated with yellow flower-heads having a dark-brown disk. Native of New Grenada.

Allamanda nobilis (Gard. Chron., 1863, p. 180). — Apocynaceæ. A magnificent species, introduced from Rio Branco, Brazil, by Mr. Bull. The flowers are an immense size, and of a clear bright yellow, without markings of any kind. It has a trailing habit, and will eventually become one of the leading kinds for exhibition.

Lælia albida, var. *Tuckeri* (Gard. Chron., 1868, p. 208). — Orchidaceæ. A grand variety of this well-known and beautiful species. The flowers are large, and of a lovely amethyst color, with purple lip.

Lælia albida, var. *brunnea* (Gard. Chron., 1868, p. 208). — Orchidaceæ. The sepals and petals are chestnut-brown, with lip of same color.

Lælia albida, var. *ochracea* (Gard. Chron., 1863, p. 208). — Orchidaceæ. Rather a poor variety, with pale-brown sepals and petals, and rather darker-colored lip.

Begonia nigrovenia (Gartenflora, t. 545). — Begoniaceæ. A stove perennial, with a creeping rhizome. Bright-green leaves, with the principal ribs dark red. The flowers are small and numerous.

Clematis Lady Bovill (Floral Mag., t. 370). — Ranunculaceæ. One of the fine hybrids raised at the Woking Nursery. It is distinct in habit from the rest of the novelties which have rendered that place so famous; having more of the character of lanuginosa manifest in the plant. The buds and exterior of the sepals are quite woolly. The flowers are large, with short, broad, concave sepals; and the color is a pale grayish blue.

Miconia Teysmanniana (Gartenflora, t. 537). — Melastomaceæ. A stove

shrub of considerable size, with elliptic-ovate five-nerved leaves of a metallic green, and a terminal panicle of small white flowers. Native of the Eastern Archipelago.

Sanchezia nobilis variegata (La Belge Hort., 1867, 14). — Acanthaceæ. One of the finest of stove plants which have lately been introduced. It is of free growth, with large oblong leaves boldly striped with rich golden yellow, and bearing, like the type, fine yellow flowers, issuing from crimson bracts. Native of Bolivia.

Eupatorium Haageanum (Gartenflora, t. 555). — Compositæ. An erect shrubby greenhouse plant, with opposite, ovate-acuminate leaves, and small heads of white flowers.

Eupatorium Weinmannianum (Gartenflora, t. 555). — A shrubby greenhouse plant, with opposite, elliptic, lanceolate leaves, and small capitules of white flowers, forming a large corymbose head.

Ortgiesia Tillandsioides (Gartenflora, t. 547). — Bromeliaceæ. A dwarf stove perennial, with short stems, spongy leaves, and short spikes of red flowers nestling in the heart. Native of Tropical America.

Miltonia festiva (Gard. Chron., 1863, p. 572). — Orchidaceæ. A beautiful Miltonia, similar in form to *M. spectabilis*, with yellow sepals and petals, and dark purple lip.

Prunus subhirtella (Neerl. Plant., t. 49). — Rosaceæ. This elegant hardy flowering tree is the *Cerasus pendula* of Siebold's Catalogue. It forms a small tree, with pendent branches, furnished with small leaves and white flowers with a red calyx, borne three or four together on the short growths from the flowering buds. Native of Japan.

Cochliostema Jacobianum (Gard. Chron., 1863, p. 264). — An extraordinary stove epiphyte, with large leaves three feet and a half long by six inches in width. From Ecuador. It grows in a large tuft, the flower-spikes being produced from the axils of the leaves.

Cattleya speciosissima Lowii (Gard. Chron., 1868, p. 404). — Orchidaceæ. A beautiful introduction from Venezuela by Messrs. Low. This surpasses in beauty all the forms of *C. labiata*. The sepals and petals are of a fine soft flesh-color, with a fine amethyst-colored lip. The flowers are of an immense size, measuring eight inches across, the individual petals being four inches in width.

Aristolochia Duchartrei (Gard. Chron., 1863, p. 516). — Aristolochiaceæ. A free-growing species from the Upper Amazon. The leaves are smooth, rather thick in texture, and broadly ovate-acuminate; and the flowers, produced in tufts from the old wood, are of a pale-brown color.

Dendrobium crystallinum (Gard. Chron., 1868, p. 572). — Orchidaceæ. A noble addition to this fine genus. One of Messrs. Veitch & Sons' Burmese introductions. It has stout bulbs. The sepals and petals are pure white tipped with rosy purple. The lip has a purplish apex, with fine orange disk. The whole of the colors are pure and bright; and it can fairly lay claim to being one of the best dendrobes yet introduced.

Myosotis dissitiflora (Gard. Chron., 1868, p. 599). — Boraginaceæ. This

beautiful forget-me-not was first introduced by Mr. Atkins of Painswick, in 1852, from Switzerland, and has since been known under the name of *M. montana*. One of the best for spring gardening.

Odontoglossum Andersonianum (Gard. Chron., 1868, p. 599). — Orchidaceæ. A beautiful addition to this lovely genus, introduced by Messrs. Low from New Grenada. Flowers pale yellow, barred with cinnamon-colored stripes.

Tacsonia eriantha (Woolly-Flowered Tacsonia, Bot. Mag., t. 5750). — A noble passion-flower, resembling *T. mollissima* in color of flower, which is a delicate rosy pink, but differing conspicuously in the white under-surface of the foliage

TACSONIA ERIANTHA.

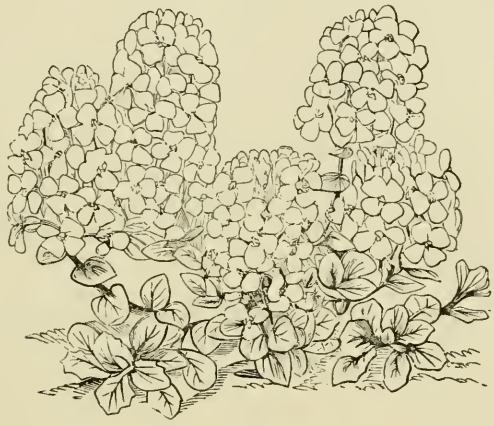
and long bracts. Though a native of the central regions of America, it grows at great elevations; and is, therefore, when under cultivation in this country, a greenhouse or conservatory plant.

Eranthemum igneum (Flore des Serres t. 1722). — Acanthaceæ. A pretty dwarf stove perennial, with broadish elongate-oval leaves of a dark dull green, the main and principal lateral nerves being marked out by distinct flame-colored bands, passing into yellow towards the extremities. Native of Peru.

Acanthophœnix crinita (Flore des Serres, t. 1706–7). — Palmæ. A very elegant stove palm, with the petioles densely armed with black needle-shaped spines, and beautifully pinnate glossy-green, sickle-shaped fronds.

Bertolonia margaritacea (Flore des Serres, t. 1697). — Melastomaceæ. A charming dwarf stove perennial, with broad ovate five-nerved leaves, of a dark shaded olive-green above, spotted in lines with white pearly spots, and of a bright red beneath. The flowers are pale rose.

Iberidella rotundifolia (Round-Leaved Iberidella, Bot. Mag., t. 5749). — A lovely little rock-plant, native of shingly, calcareous soils in the Alps of Europe,



IBERIDELLA ROTUNDIFOLIA.

at elevations of six thousand to nine thousand feet. The leaves are slightly glaucous in hue; the flowers pale lilac, with yellow eye.

Abies numidica (Flore des Serres, t. 1717–18). — Coniferæ. A fine, hardy evergreen tree from Algeria, remarkable for its pyramidal habit and silvery leaves. It grows from fifty to sixty feet or more in height, with a trunk about sixteen inches diameter, and forms a compact conical mass, composed of numerous branches, thickly furnished with dark-green leaves, silvery on the under surface. — *Floral World.*

THE railway from Brussels to Louvain is bounded on each side by a hedge of fruit-trees, consisting of pears and apples trained espalier-wise. Loss by theft is not feared, though, everywhere in the country, fruit is more or less left to the public honor to protect.

A deposit of sulphate of ammonia exists in enormous quantities in certain lagoons in Tuscany, which, it is believed, may be made of great value as a fertilizer.

Sulphate of iron, or green copperas, is often recommended as a disinfecting material for cesspools, &c.; but, though it will remove bad odors, the compounds which it forms are insoluble in water, and therefore of no value as manures.

Some berries of pyracantha affected with fungus were introduced into England from Russia, and every plant raised from those berries was afterwards found to be affected with fungus.

Pomological Congress of France. — We glean the following particulars of the labors of the Pomological Congress of France, which held its thirteenth session at Bordeaux, in September last, from an account recently published in our contemporary, the "Revue Horticole." The session occupied five days of constant work; and a hundred and seventy-two kinds of fruits, returned for further study at the preceding sitting, together with twenty-three new kinds, were examined, first by the special committees appointed for that purpose, and afterwards by the general meeting. About a hundred and fifty of these have been retained, twenty-seven rejected, and fifteen admitted for further investigation; seven of the latter being strawberries. To be thus admitted for study, a new fruit must be accompanied by a favorable report, with particulars as to its identity and value from the Horticultural Society of its locality; but, for its definite reception, favorable reports from different localities must be laid before the congress, since a variety may be good in one locality, because of particular circumstances, and bad everywhere else; while in exceptional years certain fruits will also be found to possess good qualities which they would not have in ordinary years. The congress thus provides itself with evidence as complete as possible.

Three pears only out of forty-nine were deemed good enough to be admitted definitely: they were, Brune Grasseline, Chaigneau, and Fortunée Boisselot. Eight have been struck off the list: some provisionally, not being sufficiently well known or appreciated; others definitely, for want of good qualities. These were Alexandre Lambré, Bonne Charlotte, Colmar Bonnet, Léon Grégoire, Beurré d'Hiver nouveau, Clapp's Favorite, Prince Impérial de France, Rousselet Decaster. Seven new varieties have been admitted for study; namely, Beurré Ladé, a seedling from M. Grégoire, presented by MM. Baltet frères; Auguste Mignard (same origin and presenters); Professeur Hortolès, obtained and presented by M. Morel of Lyons; Marie Jalois, presented by a Nantese gardener; Souvenir de Goëde, a seedling, from M. Bouillé of Beauchamps; Président Lesant, raised by M. Boisselot; and Napoléon, a seedling, from M. Boisbunel, presented by M. Mauduit.

Apples were not more fortunate, three only out of thirty-four having been adopted: they were, Ménagère, admitted as an ornament of table, Chailleux, and an English variety. These were ranked among the good fruits. Three were rejected; namely, Reinette à Côtes, Reinette Clochard, and the Pepin d'Or. Eight new varieties were admitted for study: they were Coing and Champs Gaillard, presented by the Society of Bergerac; Transparente de Croncels, a seedling, from M. Baltet, ripe in August; Stewner [? Sturmer] Pippin, ripe in April and May; Reinette Tardive, and Pomme de Bailleul, presented by M. Mauduit; Pomme d'Eclat and Balwine, which is very fertile, and whose fruit ripens in May.

No new peaches were admitted; but, among those presented, Grosse Jaune, Impératrice Eugénie, and Belle Impériale remain for further study. The Vineuse de Fromentin of M. Graindorge was considered synonymous with the old variety bearing that name.

Of three plums, none were admitted. The Imperial Gage was rejected. All

varieties of apricots were rejected, except two, Liabaud and Mexico, which remain for study. The Bigarreau Papal Cherry was rejected. The figs have been more fortunate, thanks to a special study of them made by the Society of Montpellier. Out of ten varieties, three were adopted.

The varieties of strawberries admitted were, Frogmore Late Pine, Duc de Malakoff, Empress Eugénie, La Châlonnaise, Napoléon III., Sir Joseph Paxton, and Victoria. According to the Horticultural Society of Beauvais, the two varieties called Princess of Wales and Wonderful have been rejected; the latter as being synonymous with Myatt's Prolific.

The jury was very severe in the case of grapes; for, out of twenty-eight varities, only one, the Aleatica nera, has been admitted. Six new varieties have been admitted for study; namely, Lady Downe's Seedling, presented by the Imperial Society of Paris, and five others presented by the Horticultural Society of Gironde. This latter society had selected from among the best vines cultivated in the vineyards of Bordelais and Médoc, not yet admitted by the Congress, the following sorts: Gros Verdot, Petit Verdot, two of the sorts most extensively grown at Cantenac; and Verdot Collonges, giving an ordinary wine; Grosse Vuidure, which produces fine wines of first quality; and Pignan, a variety of an exceptional fertility. — *Gardener's Chronicle.*

Dwarf Peaches. — So much interest is now felt in dwarf peaches, that we copy from the "Revue Horticole" the account of a new kind said to be superior to any other: —

Luizet Dwarf Peach. — This interesting variety, obtained in 1861 by one of the most distinguished arboriculturists, M. Gabriel Luizet, senior, at Ecully-les-Lyon, Rhone, is entirely distinct from all other varieties of dwarf peaches.

The following are the characters which it presents: Tree very dwarf, vigorous, and fertile; branches large and short; bark green, a little channelled and also corrugated, forming transverse ridges; leaves without glands, very near together, large, sharp-pointed, deeply serrated, the denticulations very acute; fruit small, commonly greater in height than breadth, slightly one-sided, surface a little uneven; stem in a deep, narrow cavity; skin easily separated from the flesh, nearly smooth, brilliant red next the sun, greenish on the shaded parts, dotted with lively red on the intermediate portions; flesh parting from the stone, yellowish-white, clear red around the stone, which is of medium size, chestnut color, deeply furrowed; juice abundant and sprightly.

The Luizet Dwarf was raised from a seed of the Grosse Mignonne, a fact more than sufficient to demonstrate that the latter variety does not always reproduce itself identically from seed, as is still maintained by many persons.

The latter, indeed, has, as it were, nothing in common with the former, a fact which, so far from surprising us, is conformed to a great number that we know: it cannot even be otherwise; infinite diversity, more or less sensible, being the great law which governs all.

However that may be, we recommend the Luizet Dwarf. It is productive, though not large; the fruit is beautiful; and, what is more, it is better than any other of the dwarf varieties known to us. *E. A. Carrière.*

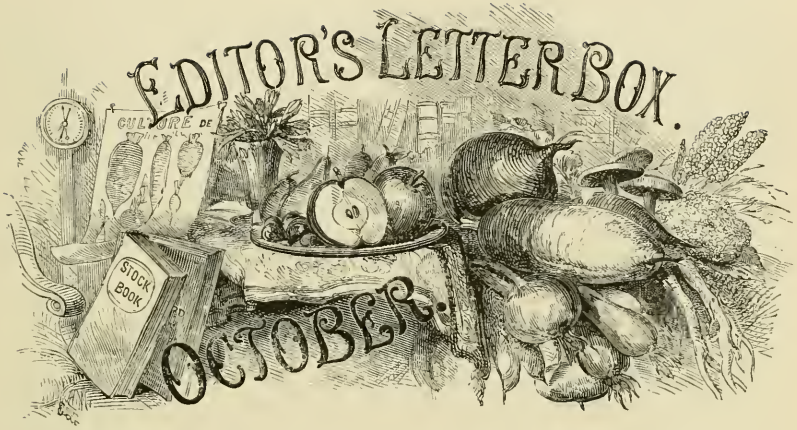
New Fruits of 1868. — The new fruits of the past year have been of unusual merit. The grape alone, the noblest and most prized of all our fruits, has yielded enough of note to make 1868 a red-letter year. The Golden Champion is probably the most magnificent grape of which our country can boast. This splendid acquisition is every inch a champion; golden in color as the Muscat itself, with a flavor equalling its rival for richness, although partaking more of the Hamburg character, and with a vigorous constitution, adapting it to fill worthily the blank which has long been apparent, — that of a white companion to the Black Hamburg. This, with the Madresfield-Court Black Muscat, the Royal Ascot, and the still older Mrs. Pince's Muscat, show rich acquisitions among grapes during the last year or two. Some curious perfumed varieties, obtained as crosses from the strawberry grape, have also been reported, and of these we shall doubtless hear further during the present season.

Amongst peaches and nectarines, the improvements which are being effected are marvellous. The gem of the season is Magdala, a peach of medium size.

Figs, which have been strangely neglected in this country, though there is no fruit so really delicious, have come in for more than a usual share of attention. In the Negro Largo, introduced from Spain, we shall have gained a noble-looking fruit, of large size, prolific, and of excellent quality; while the little-known Bourjassote Grise, is, perhaps without exception, the richest of all figs; and the Col de Signora Blanca panachée, is both an extremely good and a particularly beautiful sort, the fruits being handsomely striped with bars of green and yellow.

Of apples worthy of notice, the season has introduced to us Annie Elizabeth, a large culinary winter variety; Beauty of Waltham, an autumn dessert sort; Coole's Seedling, another handsome dessert sort; and Mrs. Ward, a charming winter dessert variety.

Amongst pears, we have one sterling acquisition in the Summer Beurré d'Aremberg, which ripens in August, and was noticed in our last volume: it was raised from the old Beurré d'Aremberg. Beurré du Cercle, an introduction from the Continent, is a large October pear, with flesh resembling that of the Marie Louise and Glout Morceau; and Madame Treyve, another sort, of excellent quality, is one of the most beautiful pears in existence. — *Florist and Pomologist.*



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

A. M., Richmond, Va. — It would be almost impossible for us to name for you a complete collection of the "grasses, cyperaceæ, and junceæ of Virginia." Such an undertaking would consume more time and require more study than our editors can give. We hold ourselves ready to answer questions of correspondents; but can hardly undertake to name for any one all the plants growing in any State, when by a little study he may ascertain the names of most himself.

B., Boston. — Mr. Rand's previous articles in the Journal have given lists of the "well-known hardy varieties of rhododendrons." Lists have also been published in reply to several correspondents during the last two years. You can easily find them.

IDEM. — To eradicate mealy-bug, take every plant out of the house, or down from the walls ; then wash every part of the house with strong, hot soap-suds ; then give a good coat of paint to all wood-work, filling all cracks. Wash every plant or vine which is in the border with great care with strong soap-suds, remove all old foliage, and prune in well. Do not allow a plant to be returned to the house until every part has been thoroughly cleaned.

In no other way can you get rid of this pest : and it is best to do it thoroughly ; for, if it is as bad as you represent it, you will have no comfort in greenhouse or vinery until you do it. Time, as soon as possible. As to washing plants with kerosene, it kills the insects, and usually the plants.

RURALIST. — In planting two acres of small and large fruits for market near a manufacturing town of some twenty thousand inhabitants, what kinds of fruit and proportions of each would be best to plant ? The soil is a stiff clay. — We would advise you to plant a large proportion of strawberries, as, coming earliest, they are always more sought after than any other of the small fruits. If you seek for the largest quantity, the Wilson is the kind. These, as well as raspberries and blackberries, may be grown between the rows of trees while they are young. Among large fruits, peaches supplant all others in their season ; and, while we would plant a good supply of apples and pears, we would set them wide apart, with peaches between, which will come to maturity, and do their work, and die, while the apples and pears are growing. In regard to varieties both of these and the small fruits, the best thing you can do is to visit the most successful cultivators in your neighborhood, and find what varieties have done best with them, and observe their methods. You will generally find them willing to communicate freely the results of their experience ; and it will be of more value than any information that we can give, without more particular knowledge of your circumstances.

IDEM. — Would it pay to raise Black-Cap berries for sale in a dried state at the prices they have been selling at for several years in the New-York market ? What is the number of pounds of dried Black-Cap raspberries in a bushel of fresh berries ? — We have never known Black Caps raised for drying in this part of the country ; indeed, they are cultivated but little for any purpose ; and therefore we are unable to answer your inquiries concerning them : but we print your questions, trusting that some of our readers will be disposed to give you the desired information.

G. I., Cumberland, Io. — We do not recognize the grapes as any variety known to horticulturists ; though it was difficult to form a decided opinion, as they were somewhat decayed ; and, for the same reason, we are unable to pronounce on their merits.

Frank, Milford, Mass. — Some of my neighbors say strawberries will do nothing on sward-land just turned over. How is that? — If the sod is buried deep so as to cause it to rot, and so as to have sufficient fine mould for the roots of the strawberry-plants, they will grow as well there as anywhere, provided the soil is equally good; but they are liable to be destroyed by the larva of the dor-bug, or May-beetle, which infests grass-land. We know an instance where a large quantity of valuable plants were destroyed under such circumstances the present season.

The same worm is known at the West, as appears by the following note from a correspondent in Champaign County, Ill. The writer is correct in regard to the remedy: that which he proposes is the only one. We have known a large number of valuable plants destroyed by this worm the present season.

"I would like a hundred plants of the President Wilder Strawberry very much. But we have on these prairies, in the soil, a large white grub: the size is about an inch and a quarter to an inch and a half long when full grown, with a tinted head full of horns. If he ever gets to the root of a strawberry-plant, he never leaves it until it begins to wilt and shows signs of death. This is my enemy that prevents me from buying strawberry-plants. There is no way to get rid of him but by digging up every inch of the ground in spring by spading, and pick them up and kill them. This last spring, I killed and picked up for my fowls thousands of them. I have an acre and a quarter of garden: it is an expensive job to look after them. Five years ago, I set out a thousand plants of Wilsons: now I have not one, nor do I intend to buy any."

Idem. — My watermelon-vines do not bear any fruit. When is the proper time to transplant asparagus? — With regard to the failure of your melon-vines to produce fruit, we are not provided with the facts necessary to give the information desired. It may be caused by excess or deficiency of heat or moisture; it may be that the soil is not congenial; and it may be that the particular variety under cultivation is not adapted to the climate. If the plants make a healthy, vigorous growth, and are still non-productive, we should certainly recommend a change of seed.

In regard to planting asparagus, we refer our correspondent to our last volume, p. 242; and also to p. 187 of the present volume.

I. A. Providence, R.I. — Hybrid perpetual roses may be raised from cuttings at any time by placing the cuttings around the sides of pots filled with sandy loam, and plunging the pots in a very moderate hot-bed. The cuttings soon root, and should then be set out separately in small pots, and gradually hardened off.

H. G. L., Volusia, Fla. — *Achyranthus aureus reticulatus* with us cannot attain any great height; for the frost always cuts it off when in full growth. You have the advantage of a long season; but the plant will probably soon flower, and then will stop growing. Some of the species, however, grow six feet high in tropical countries.

R. W., Troy, N.Y. — It would not be safe for you to leave *Yucca gloriosa* out of doors during the winter. Any protection you could give would probably prove insufficient. This plant is, however, very easily managed. We take ours up in October, pot them, and store in a light frost-proof cellar, giving during the winter only enough water to keep the soil from becoming dust-dry. In spring, turn the plants into the ground. *Yucca aloefolia* requires the same treatment. The variegated-leaved variety should, however, be kept in the parlor or greenhouse, as the colors are impaired if kept in the cellar. *Y. quadricolor*, a very beautiful plant, also requires light in winter; but *Y. glaucescens*, *longifolia*, and *recurva* do well with us with cellar treatment.

Idem. — We should be much pleased to receive a paper from you upon the Campanula. We fully appreciate the beauty of the genus, and have it on our list to appear among our illustrated articles. Too much cannot be written upon the subject; and, where all the species are so beautiful, it is difficult to choose for cultivation.

E. A. L., Williamsville, N.Y. — The care of gold-fish is not exactly in our line; but we have obtained from one of the best ichthyologists in the country the following facts: The gold-fish will live without being fed, deriving its food from infusoria in the water; and it is constantly straining these minute animalcules from it. Of course, the oftener the water is changed, the greater will be the supply of infusoria. The frequency of changing the water will depend somewhat on the size of the globe. Whenever the fish comes to the surface to breathe, you may know that the supply of air in the water is exhausted, and it should be changed at once; or, rather, it must be changed so often that this will never happen. Fish will thrive better if fed; and the best way of feeding is to suspend a piece of raw meat in the water by a string, so that they can suck it. They may also be fed with crumbs of bread, bits of earth-worms, or flies, or other insects. We have often seen them come to the surface of the water, and take a fly which had been thrown to them. The quantity of excrementitious matter discharged will be much greater if fed; and it should, of course, be removed. Any kind of small fish, such as minnows, shiners, or chub, may be placed with the gold-fish; but bream or pickerel would destroy the gold-fish.

J S., Schenectady, N.Y. — The excrescences on the leaves are galls, caused by a minute white insect on the under-side of the leaf; but we are unable to determine its name. These galls have been afterwards attacked on the upper-side by a fungus, a species of sphæronema. We cannot at present suggest any remedy, and very probably the injury will not recur another year.

My grapes are rotting badly this season. Concord, about one-third rotted; Isabella has been exempt; Rogers's No. 1, Hattie, Delaware, Cassady, Diana, and Mary Ann, slightly affected. Some of my vines have blighted on the extreme ends. We have a fine crop of apples; seedling peaches, heavy crop; grafted peaches, light. *E. W. B.*

Lexington, Mo.

The President Wilder Strawberry. — I made a visit to Mr. Wilder's grounds last month to see this "wonder" in fruit; and I was more than pleased with its appearance. It certainly is all that is claimed for it. Should it prove as well on different soils as in Dorchester, it must eventually supersede any strawberry in cultivation. Very truly yours, *James Draper.*

Worcester, Mass., Aug. 25, 1869.

Mr. Editor, — Thinking it might be of interest to some of the readers of your valuable Journal (which comes to me regularly) to know that we sometimes raise potatoes in Kansas, I will give you a statement of my success with the Early Rose. I planted last spring, in my garden, a quarter of a pound; during the summer, gave them no extra care; and have just dug thirty-one pounds and a half of as fine potatoes as I ever saw. I am satisfied that the Early Rose is a success. Yours, &c., *R. A. B.*

Topeka, Kan., Aug. 19.

E. A. L., Williamsville, N.Y. — The calla-lily (*Richardia æthiopica*) will do well in the water of an aquarium in summer. Other suitable plants are *Limnocharis Humboldtii*, a charming plant, with floating leaves, and canary-yellow flowers with dark purple centre, somewhat resembling a water-lily, and as large as a silver dollar. *Nymphæa cærulea* is the blue water-lily of the Nile, one of the most beautiful of flowers, and delightfully fragrant. The white water-lily (*N. odorata*) also does well.

Aponogeton distachon is a very interesting aquatic from the Cape of Good Hope. Flowers white with black, and fragrant. There are also other species.

Many of our common native aquatics do well in aquaria, and seem to change their nature and become more delicate in growth. This is especially the case with the pond-weeds (*Potamogeton*), which become very beautiful objects.

The river-buttercup (*Ranunculus Purshii*) is a very pretty plant.

The pickerel-weeds (*Pontederia*) are all easily grown.

Picking Pears. — S. P. — It is generally recommended to gather pears when they part *freely* from the tree; but, if you wait until then, you will be apt to be too late for most kinds. They should be taken off as soon as it can be perceived that their hold on the tree is loosened.

Mrs. E. C., Claremont. — Save seeds of asters, zinnias, and like flowers, from the outer rows: you thus get finer flowers. You must save seed from single gillyflowers, as the double do not produce any. If you get a good strain, a large proportion will produce double flowers.

"Grandfather Long-Legs" will not hurt your geraniums.

Frank. — Both your Japan and golden lilies are probably in unsuitable soil. They should have good loam with admixture of peat and sand, but will thrive in good garden-soil if not too close. They are easily grown; but *L. auratum* is better for frame protection in winter.

C. L. M., Vineland, N.J. — The Secretary of the American Pomological Society is F. R. Elliott, Cleveland, O. The flower sent is *Gloxinea tubiflora*, though it more nearly resembles a *Gesnera*. See Edwards's "Botanical Register," vol. xxxi., pl. 3, for figures, botanical description, &c.

Mrs. N. L. D., Rutland, Vt. — Your plant with white flowers is the white variety of Jacob's-ladder (*Polemonium cæruleum*). The plant with the lily-like leaf and spotted flower is *Pardanthus chinensis*, and is hardy.

Which of the other plants you mean by "battle-plant," we cannot decide. You enclose two branches, — one a *Pilea*, probably *muscosa;* and the other, *Fabiana imbricata.*

Ruralist. — If you have a greenhouse, sow gladiolus-seed in pans in February ; otherwise, sow it in a cold frame in May.

S. Foster. — The yellow flower sent is *Cassia chamæcrista:* the purple is *Gerardia purpurea.*

E. D. H., Abington. — The crimson thrift is not (to our knowledge) for sale in this country.

E. R. C., Syracuse, N.Y. — Your plant is *Pardanthus chinensis.*

TREATMENT OF THE AMERICAN GRAPE-VINE.

By Edward F. Underhill, Brocton, N.Y.

The question of the proper method of planting, training, and pruning the native grape-vine of America, is one of especial interest and importance to a large class of our people who have invested their means in vineyards. In the text-books on grape-culture, in the horticultural journals, and in the remarks of grape-growers at their meetings for discussion, the subject is discussed, and the most diverse opinions and views are expressed; and, unable to arrive at a definite conclusion as to the merits of the different theories propounded, the practical grape-grower is compelled to grope blindly in the dark until a tedious and often costly experience shall suggest to him the proper course he shall pursue in the management of his vineyard.

Before stating the results of personal observation on this subject, let me briefly recur to the early history of vineyard-culture in America. Our first experiments were with the foreign vine, and these signally failed; and it was only when the Isabella and Catawba were discovered and disseminated that our people believed we had native grapes of sufficient merit to justify

their cultivation in vineyards. In many localities, there was a desire to try the experiment; but the people had only indefinite and crude ideas of the manner in which vineyards should be laid out and managed. Hence information was sought of those who had been in the vine districts of Europe, and especially of the Germans and French who had taken up their residence in America, and who could state, with more or less intelligence and particularity, the methods pursued in cultivating the vine in Europe.

Close planting is a marked peculiarity of the vineyard-culture of Germany, the vines being usually placed three feet asunder in each direction; making nearly five thousand vines per acre. In North-Eastern France the distance is scarcely over a foot, and nearly forty thousand vines are required to plant an acre. The reason ascribed for pursuing this method is the thinness of the soil, and the consequent necessity of circumscribing the growth of both root and vine; and, in the Champagne district, the latter is never allowed to attain proportions beyond those of a shrub tied to a small stake.

Having only the methods in vogue in the vine-bearing districts of Northern Europe as examples, our earliest vineyards were generally laid out and managed in conformity therewith. Mr. Longworth planted his first vineyards of Catawbas only three feet apart in each direction; and, though he subsequently increased the distance to four feet, I am informed that he regarded that as the extreme limit of departure which should be made from the European models. At North East, Penn., Mr. William Griffith planted a large vineyard with vines four feet by six. At Westfield, N.Y., a German has a vineyard planted three feet by three. Buchanan, one of the earliest, and Mead, one of the latest writers on grape-culture, recommend four by six feet as the extreme distances; and I do not now recollect any text-book which suggests a distance greater than six feet in either direction for planting in vineyards.*

But, however closely our vines were planted in early vineyard-cultivation, the experience of practical cultivators soon demonstrated that the American vine required more room for growth, if the best results were to be attained; and, from three feet by three, the distance has, from time to time, been increased, until, now, eight feet by eight is more commonly adopted than any other, where the vines are to be trained to wire trellis.

* See an article by J. M. Merrick, jun., in this Journal for October, 1868, vol. iv. pp. 242–244. — Ed.

But there was one locality in which vineyard-cultivation was commenced nearly thirty years ago, and where the planters were far removed from outside counsel. They were compelled to study the nature and habits of the vine, and thus deduce methods for its treatment. Extending south-west from the head of Canandaigua Lake in the State of New York, a distance of several miles, is Naples Valley, which, to-day, has over a thousand acres of vineyard on one of its sides. Hills a thousand feet in height enclose it; and there, for many years, the American Neapolitans lived secluded from the world. The Erie Railway, a branch of which is now but six miles distant from it on the west, was then undreamed of. No steamboat was launched on Canandaigua Lake to facilitate communication with their transmontane fellow-beings. The cumbrous stage-coach, clambering over mountain-roads, brought them intelligence of the scandals and the gossipings, and the disorders and the crimes, and the convulsions, social and governmental, native and exotic, which, in those days, sorely tried the temper of the sons of Adam on this mundane sphere. There they lived, had their periodical spasms of politics, voted the regular ticket, got married, multiplied, and did a good many things in a peculiarly American way; for, isolated as they were, the injunction of the Father of his Country to "beware of foreign influence" was to them a work of supererogation, because "foreign influence" had no special desire to encounter the perils of stage-coach navigation on bad mountain-roads to make itself felt upon the manners and customs of the citizens of Naples Valley, N.Y.

Thus it was, that in the year of grace 1840, when Mr. McKay, an intelligent lawyer, determined to plant a vineyard in that region, he had no one who had ever seen a vineyard to give him counsel and advice. Arbor and garden training on high trellises were the only methods in vogue in grape-culture of which he had any knowledge; and, in planting an acre of Isabella vines, he put them in the ground a rod apart in each direction, — a system of planting which required a hundred and sixty vines for the acre. And, to make sure that his ground should be rich enough for grapes, he took advantage of the fact of a drove of cattle dying in the valley from some malady, and dug deep pits in the ground he intended for his vineyard, in each of which he placed the carcass of an ox, refuse bones, and leather-shavings, and over each carcass he planted a vine! He made his trellises

seven feet high, and they were soon completely covered with the vines. For a time, he gathered good crops, — once, as much as six tons from the hundred and sixty vines planted on that acre of ground. But, as the roots grew rank in a soil of such excessive richness, Nature employed its forces in endeavoring to restore the equilibrium between vine and root; and the result in later years has been a redundancy of wood and foliage, and but little fruit.

During subsequent years, as the methods pursued in other vineyards became known, the wide planting in the McKay vineyard was the subject of considerable criticism; and this was not without its effect upon those who afterwards established vineyards in the valley. And though never tolerating the plan of close-planting, yet the Naples people did lessen the distances, in many instances, to twelve feet by twelve. But the example of high training, however, was followed; and the general height of the trellises is from six to six feet and a half. With the room thus accorded to the vine to grow, the necessity for summer-pruning was scarcely ever felt; nor, indeed, was it introduced until a few years since, when Germans found their way into the valley, and planted vineyards. But the contrast between the fruiting qualities of theirs and their neighbors' vines soon caused them to discontinue, or to greatly modify, the extent to which they practised that system of pruning.

In connection with the facts I have stated, I will add that the vineyards of Naples Valley, notwithstanding the excessive rain-fall of the summer, are to-day more healthy and better loaded with fruit than any I have seen on an extended tour through the vine districts of New-York State and the shore of Lake Erie; and, though there was some rot among the Catawbas, there was not enough to prevent a fair crop.

It would seem to those familiar with the general practice in planting vineyards, that a distance between the vines of twelve feet by twelve, requiring but three hundred and two vines to the acre, would certainly be sufficient to satisfy the most extreme advocates of wide planting. But experience at Naples Valley has shown that even a greater spread on the trellis may be necessary to insure the production of fruit. It is a common remark among practical vineyard-cultivators, that for the rank-growing varieties of grape-vines, like the Isabella, Catawba, Concord, Diana, and Clinton, a

lean, poor soil is essential ; and that the use of fertilizers, except in extreme cases, tends to increase the growth of wood and foliage, and to diminish the production of fruit. While, under certain circumstances, there is a phase of truth in this statement, yet facts which have transpired in Naples Valley have shown, that, under other circumstances, a very rich soil may be profitably used in vineyard-culture, if other prerequisites are at hand.

Some years since, Hon. E. B. Pottle, President of the New-York State Grape-Growers' Association, found an Isabella vine on his place from which he had been unable to get any fruit. With nearly thirty acres of vines in successful bearing elsewhere, he could only attribute his want of success with this to the richness of the soil in which it grew. Though the vine had a spread of twelve feet on a high trellis, the shoots made extravagant growth. Thinking that this untoward tendency of the vine in not fruiting might be owing to its being restricted in the space it required, he determined to try the experiment of giving it a spread of twenty-four feet on the trellis. The result was like magic. The vine soon covered the space given it ; it was no longer difficult to be kept under control ; and, the next season, it produced a crop of nearly a hundred pounds of excellent grapes, and has continued in well-doing ever since.

To still further try the merits of the system, he this year took out alternate vines from a certain spot in his Isabella vineyard where but little fruit had been produced of late, leaving each vine twenty-four feet of trellis to cover ; and in this instance the vines have become largely fruitful. In another case, he allowed the vine to run twelve feet upon one side of the stem, but on the other side kept it within a space of six feet on the trellis. Where the additional space was given the vine, there will be a yield of about forty pounds of grapes : on the other side, there will not be more than ten.

I was shown still another illustration of the working of this method of wide planting and high training on a rich soil. As previously stated, the McKay vineyard has lately borne but little fruit, by reason of the large amount of fertilizing material put into the soil at the time of planting. At the suggestion of Mr. Pottle, the present owner of the property last spring removed alternate vines from certain rows, leaving the remaining vines thirty-three feet apart in the rows. Here the result was the same. Though

the trellis is not yet fully covered, the vines will each yield from a hundred to two hundred pounds of fine, showy clusters of grapes; while on the adjoining rows, where the vines are but sixteen feet and a half apart, there will not be over twenty pounds of indifferent fruit to each vine.

If, from the facts I have here presented, there are any laws to be deduced, of practical significance in vineyard-culture, they are these: —

1. The normal growth of a grape-vine is in proportion to the richness of the soil in which it is planted.

2. When the root has so far increased in its size as to disturb the relative proportion which should exist between it and the vine, it will spend its energies in endeavoring to restore the equilibrium by an increased growth of vine, the efficiency of which will be seriously impaired for bearing fruit.

3. The distance to be observed in planting vines along the line of the trellis must depend upon the richness of the soil.

To this system of wide planting and high training (the results of which, as presented, are beyond dispute) I have heard but a single objection or criticism. A gentleman of large experience as a grape-grower and wine-maker in this country has asserted to me that grapes grown on vines thus treated are inferior in quality to those which are grown on vines closely planted; and that, for use in the manufacture of wine, they are especially defective in not possessing the necessary saccharine properties. As this is purely a question of fact, it can only be determined by a practical test; and arrangements have been made by the New-York State and Lake-Shore Grape-Growers' Associations to have the musts of grapes grown under these different conditions tested this fall by the must scale.

But, besides the wide planting and high training peculiar to the vineyards of Naples Valley, a resident grape-grower, Mr. A. J. Byington, has for many years practised a system of pruning peculiar to himself, which, in connection with wide planting, has been attended with the most marked success. As the system is the result of intelligent study and observation, I will endeavor to state the theory upon which Mr. Byington proceeds.

During the season of growth, Nature has pushed out from each bud left on the vine at pruning a shoot, from which laterals and even sub-laterals have in their turn been produced, with leaves, tendrils, fruit, and buds.

During the autumn, the green wood ripens, and forms canes: the leaves fall on the approach of winter, and there remains on the trellis a tangled mass of wood. The vine above and the root below ground are supposed to have attained an approximate, if not such an exact equilibrium as Nature would dictate. But, if the vine is to give us its best results, only a small proportion of buds on the wood of the current season must be allowed to produce fruit the next; and hence, time out of mind, the practice of pruning or cutting away more or less of the ripened wood has been resorted to. This has been done either in the autumn, winter, or spring; and either period has been regarded as appropriate; though, in the spring, it has been held to be important not to postpone the operation until the season becomes so far advanced as to cause the vines to bleed after pruning. But, whenever done, the practice has been to cut away the wood to from two to four canes if long pruning is practised, or to spurs if spur-pruning is the system adopted. The result of the operation is, that the normal balance between root and vine has not merely been disturbed, but has been almost destroyed; and when dormant vegetable life awakens in the spring, and a large unpruned root sends forth its sap, it finds but few buds where there should be many; and, at once, Nature sets herself to work to restore the balance. The shoots grow rank, and from these laterals push out, and the vine is difficult to control. With an abnormal growth, the shoots are necessarily weak, and the weakness of the shoot is imparted to leaf and fruit-cluster; and if, during inflorescence, there be rains, imperfect fertilization is much more likely to occur, followed by blasting of the fruit, or sloughing of the berries when farther advanced. And this system, pursued year after year, so far disturbs the course of Nature as to leave the vine a ready prey to disease.

If, then, pruning is essential to vine-culture, and yet pruning as ordinarily practised is detrimental, if not ultimately destructive, to the vine, it follows that the prevailing systems are inherently vicious, and that some other method of pruning must be practised to meet the requirements of grape-culture; and this brings me to the system of planting, training, and pruning adopted by Mr. Byington.

In planting a vineyard, Mr. Byington places his vines from eight to twelve feet apart in the rows, having regard to the richness of the soil and the

character of the vine as a rank or moderate grower. His trellis is six and a half or seven feet in height, with five wires. When the vines have fully covered the trellis, and are evidently impatient of restraint, he takes out alternate vines, leaving the others from sixteen to twenty-four feet distant from each other in the rows.

During the fall or winter, he does his first pruning. It is quickly accomplished, and merely consists in cutting away some of the tangled mass of wood, but leaving three times as much as he thinks he will require. Nothing more is done with the vines until the early days of summer. In the mean time, the buds burst, the shoots push out, the leaves develop, and the fruit-clusters appear: and, as not a few but very many buds were left to receive the life-giving currents proceeding from a large and strong root, vegetation proceeds in its normal course; and there is strength and vigor, and not weakness and decay, in the progress it has made. It is during the critical period of the starting of vegetation that Nature should encounter nothing to disturb the performance of her functions; and, this period having passed, when the clusters have appeared the time comes when the real work of pruning may be done. Then, surveying the trellis, Mr. Byington sees fruit-clusters in great excess: but this is a difficulty easily cured; whereas, in case of a deficiency, he would have no remedy. He has the courage to cut when cutting is attended with no danger, even though scores and scores of clusters of incipient fruit are thereby made to come to nought. He removes entire canes, then entire shoots, until he is satisfied that he has just sufficient left to fill the trellis without crowding. Then from weak shoots he removes a portion of the clusters, that they may have no more fruit than they will have leaves to ripen. This completed, the canes, and from time to time the shoots, are brought up, and secured to the trellis wires. No summer-pruning or pinching is resorted to, and Nature proceeds with the work of maturing the fruit.

And, now, as to results. I refer first to the Delaware vine, because it has been regarded as *the* vine for close planting and pruning. In Mr. Byington's vineyard, *the vines were sixteen feet apart in the rows;* and from each stool, the trellis, six feet and a half high, was covered with healthy shoots and foliage. The first and second wires were literally loaded with fruit; and, on the third and fourth wires, there was an abundance. Upon no vine

did I observe less than forty pounds of grapes, and upon many there could not have been less than eighty pounds. And, with this remarkable crop, I saw, on the 24th of August, many clusters which were more than half colored, notwithstanding the fact that the season has been most unpropitious for ripening grapes. The Isabellas, Catawbas, Concords, and Ionas, treated in the same way, showed the same result; and with the exception of the Catawbas, which were slightly affected with the rot, they were free from disease; while in an adjoining vineyard of Isabellas, planted on the same soil, but which had been pruned in accordance with the ordinary method, both leaf and berry were badly stricken with mildew. Nor is this an exceptional year in Mr. Byington's experience; for I have been informed by most intelligent and credible authority, that, for several years, this same anomaly of heavy crops and early ripening has been characteristic of his vines.

In what I have written, I do not know that I have, in all its details, correctly stated Mr. Byington's theory; but the facts set forth are from personal observation. I will only add, that if the fruit, this season, shall, upon proper tests, prove to be equal in quality to that ripened upon vines which have been planted and pruned in accordance with the methods usually pursued in vineyards, I shall be satisfied that Mr. Byington has added much, very much, to our existing knowledge in reference to the cultivation of the native vine in vineyards.

Brocton, N.Y., Aug. 30, 1869.

P. S. — Since the foregoing article was written, I have heard from Mr. Byington the result of his vintage. His Delaware vines, five years old, and planted sixteen feet apart, yielded an average of fifty pounds to the vine, of as choice, sweet, and well-ripened fruit as I ever tasted. His vines of the same variety, which bore this year for the first time, averaged over sixteen pounds each. An acre of Isabellas treated in the same manner has yielded him five tons of delicious fruit; and this has been by no means an exceptional year. *E. F. U.*

A CHAPTER ON EVERLASTING OR IMMORTAL FLOWERS.

By Joseph Breck, Ex-President of the Massachusetts Horticultural Society.

There are many varieties of everlasting or immortal flowers in great demand at the present time. The flowers, when dried, are used for winter bouquets and for various in-door decorations, and for tokens of affection to be placed on the graves of departed friends. Under the French name of "immortelles," they are very extensively used as souvenirs for the decoration of mausoleums in that country. In the vicinity of the large cemeteries about Paris, it is said there are shops where the principal business is to sell wreaths, crosses, bouquets, and other funeral decorations, composed of immortelles and evergreens. They are becoming quite common in this country for the same purpose and for various other decorations. Large quantities are manufactured and sold in Boston and other cities about Christmas-time, composed of everlastings of various sorts, with lycopodiums from the woods, and other evergreens. The flowers of all the species should be gathered before they are fully expanded, many of them while in the bud: they should then be tied up in bunches, and hung up with the flowers down, so that the stems may be straight when dry. They may be kept fresh and bright on the mantle-piece for many years, provided they are covered with a glass case to keep them from the air and dust. They will also remain bright through the winter, exposed to the weather; and are, therefore, very suitable to be placed on the graves of departed friends.

The various species which compose this class of flowers are the *Xeranthemums*, *Helichrysums*, *Ammobiums*, *Acroclinums*, *Rhodanthes*, *Gomphrenas*, *Waitzias*, and *Helipterums*. The last two are more difficult to grow than the others. A native species found abundantly about the country is generally overlooked or neglected, as many other flowers and plants are that grow near home, which, if brought from the Cape of Good Hope or some other distant place, would be highly prized. I refer to the family of *Gnaphaliums*, of which we have quite a number of species, particularly the *G. margaritaceum*, or large-flowering life-everlasting, and *G. polycephalum*, or sweet-scented life-everlasting, bearing clusters of flowers in corymbs, with white pearly rays and yellow disk in the former species, and nearly of the

same character in the latter, but which have a delicious odor, that remains for a long time after the flowers are dried. I see no reason why these flowers might not be colored, after the French fashion, for those who delight in destroying the beauty of flowers in the natural state.

Gnaphalium, — a word under which Dioscorides describes a plant with soft white leaves, which served the purpose of cotton. It agrees pretty well with the modern genus, which consists of very pretty, sometimes beautiful, woolly-leaved shrubs and plants, all of the description called everlasting, on account of the permanence of the colors and form of their dry flowers.

Xeranthemum annuum. — Of this species there are a number of choice varieties, which are popular annuals of easy culture in a light rich soil. They retain their texture and odor when dried, and are quite ornamental: the flowers are both single and double; but the double sorts are most desirable. The petals of the double-white variety have a silvery appearance, and the double purple is very rich in color. Both these varieties will be found extremely useful for winter bouquets, as well as ornamental in the borders.

"*Xeranthemum caryophylloides fl. pl.* — This is a striking new variety of this well-known and favorite everlasting. Their dense double-blooming flowers are of a reddish-white color, and, carnation-like, striped and sprinkled with red, rose, crimson, and purple, yet more abundantly and more intensely than in the case of *Portulaca caryophylloides*. The *Xeranthemums* being indispensable for dried bouquets, this new variety will prove an invaluable acquisition, as the dark-red stripes, when dyed and dried, remain quite unaltered. It may also be strongly recommended for bedding and grouping, as it is very double, and just as profuse blooming for bedding and grouping as the common varieties of this everlasting-flower." There are other varieties of dwarf habit which are also desirable.

Xeranthemum is from a Greek word, signifying *dry* and *a flower*, on account of the dry nature of the calyx, which retains its color for years.

Rhodanthe, from a Greek word for *rose* and *flower*. *R. Manglesii*, a most delightful plant from Swan River. This is one of the tribe of everlastings, which, gathered when in bloom, remains perfect for years when properly dried.

R. maculata, a splendid novelty, rose, with yellow disk and dark-crimson ring.

R. maculata alba. — This sport from the beautiful *R. maculata* is identical with it in habit, and differs only in the color of the ray-scales, which are of the purest and most silvery white ; the disk being yellow, as in *R. maculata.* Admirable when fully expanded, it is indescribably so when in bud ; and, preserved under a glass shade from dust, affords an ornament for the table or chimney-piece, unapproachable in elegance. It is unquestionably the finest white everlasting in cultivation.

R. atrosanguinea. — This beautiful and very distinct species differs from the *R. maculata* in its dwarfer and more branching habit, longer and more pointed foliage, and especially by the color of its flowers, which have the entire disk of a dark-purple or crimson-brown shade, varying in some specimens to almost a dark violet and maroon, as in *Coreopsis tinctoria* and its varieties. The ray-scales are of a bright purple, or magenta. A good idea may be formed of the color from the well-known *Mesembryanthemum tricolor*, which it much resembles ; but there is no white around the dark eye of the flower, as in that plant.

Helichrysum bracteatum (Golden Eternal Flower). — This immortelle has been known for a long time among us, producing golden-yellow or silvery-white flowers, but much inferior to many of the beautiful *Helichrysums*, sometimes called *Elichrysums*, which have been introduced of late years. The name is from Greek words, signifying *sun* and *gold*, in allusion to the golden-yellow flowers of the yellow variety. All the varieties of the *Helichrysums* are easily grown in any good loamy, rich soils. They may be sown in the open ground by the middle of May ; but succeed better, grow stronger, and flower more profusely, if started in a hot-bed or greenhouse in March or April, and transplanted to the borders or beds the last of May.

H. macranthum fl. pl. (Large Double Everlasting). — The numerous varieties under this head are of various colors ; viz., white, yellow, rose, brown-red, white and yellow tipped with red, and many shades of these colors.

H. compositum monstrosum fl. pl. — This section of the species *compositum* produces very large full double flowers, embracing all the colors of *macranthum*, and is perhaps only a variety of the same.

H. nanum (Dwarf Immortals). — This class grows to about a foot high, the flowers not so large as the others, but the colors are more brilliant.

HELICHRYSUM MACRANTHUM. — 1 and 2, white; 3, pink; 4 and 5, maroon, with gold centre.

H. nanum atrosanguineum has dark purplish-crimson flowers, and *H. nanum coccinneum* approaching to scarlet. There are also white and yellow varieties and intermediate shades.

H. brachyrrhyncum (*Waitzia* of the Prussian catalogues). — Of this section I know but little, as I have not been successful in raising the plants. The seeds are very small, and require more care than I have been able to bestow upon them. I have received handsome colored plates representing the flowers with the seed. The flowers have their petals reflexed; some of them yellow, rose striped, and other shades. The varieties are *W. grandiflora*, *W. corymbosa*, *W. Steetzia*, and others.

Ammobium alatum (Winged Ammobium). — The stem of this plant has a curious appendage which runs up the stems, that gives the specific name, *alatum*, or winged; the generic name, *Ammobium*, meaning, "to live upon sand." It is a pretty, half-hardy annual, with dry, silvery-white, involucral scales like a *Gnaphalium*, or life-everlasting. This is a fit companion for the other immortelles, as, when the flowers are gathered before they expand, and properly dried, they retain their form and purity any length of time. The flowers are small and yellow when they are fully expanded, and turn brown when dried; and should therefore be gathered in the bud. The solitary flowers are produced on the ends of the many branches of the plant. The height is about a foot and a half to two feet. The cultivation is very simple, and will succeed in almost any soil. They may be treated in the same manner as directed for the *Helichrysums*. When the buds are gathered, they should be tied up in bunches, and hung up to dry in the shade, with the buds down.

Gomphrena globosa (Globe Amaranth). — This well-known and popular tender annual is so familiar to almost every person, that it is not necessary to describe it. There are three varieties, — the purple, white, and variegated, — all requiring a strong heat to start the seeds. In the open ground, they should not be sowed before the last of May. It is best sown in a hot-bed in April, and then strong plants will be ready for planting out the first of June. Some soak the seeds in milk to make them vegetate quickly. What is better is to turn scalding water upon them. I have known gardeners take off the cottony covering of the seed with a sharp-pointed knife; but this is a slow process. The heads of flowers should be gathered before the seed begins to ripen; for, if the florets of the head begin to turn brown, they lose their brilliancy of color.

Acroclinium roseum and *album*. — Very pretty half-hardy annuals, flower-

ing in August and September, with white, light-rose, or dark-rose flowers. An acquisition to the family of immortelles, of easy cultivation in any good soil. Sow in the hot-bed in April, or in the garden the last of May.

Helipterum Sanfordii, with golden-yellow flowers, and the variety *alba*, with white flowers, which are produced in large globular clusters. The foliage is neat, oblong-lanceolate, entire, with a hoary coating like our wild everlastings. The species require more heat than any of the immortelles described, and, unless started very early, will hardly come to flower in the open ground, but may be transplanted in autumn, and will be an ornament to the collection of plants in the sitting-room or greenhouse. The height is eight or ten inches.

HEADING DOWN TREES.

Sometimes a tree which has become stinted in its growth in the orchard or nursery is headed down early in spring, with the view of renovating it by a new growth from the lower part. This often has a good effect, provided the tree is strong enough to bear the shock of such severe discipline. If healthy and of strong constitution, and only checked in its growth from temporary causes, it is probable that the desired effect will be produced; but, if constitutionally diseased, it will most likely grow to about the same size as before cutting down, and then cease. A feeble stock in the nursery, if budded with a vigorous sort, will often make a thrifty growth for one or two years, perhaps until sold; after which, to the great disappointment of the purchaser, it is impossible to produce a further growth. It was well remarked by one of the most sagacious cultivators we have ever known, that, "if a stock will not make a good tree without grafting, it will not with it."

PLANTING MARKET AND OTHER ORCHARDS.

By W. C. Flagg, Alton, Ill.

Two or three common practices in orchard-planting I find quite objectionable in my experience and observation.

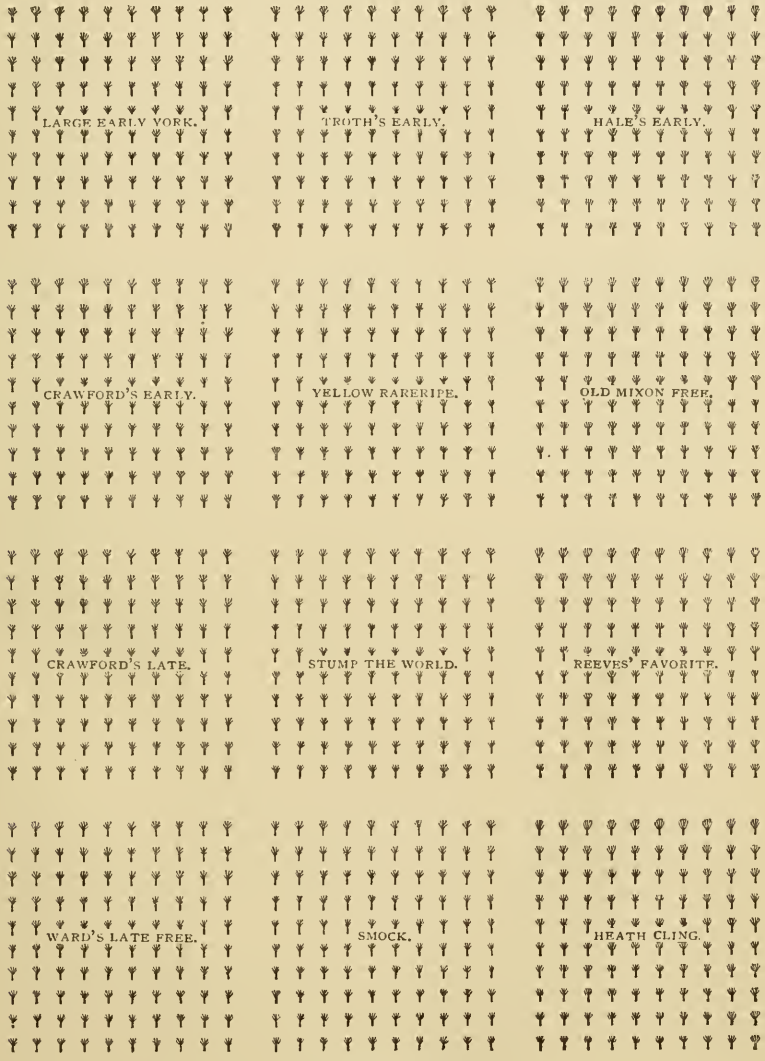
First is the not uncommon practice of planting promiscuously, without much regard to species or variety, and not much more to order in making the rows straight. When the time comes for picking the Rambo, for instance, it must be hunted over an orchard of five or ten acres, and ladders and baskets must be carried to and fro across the orchard to reach the scattered trees. This is the mistake of the thoughtless beginner.

Secondly, and generally, we find varieties planted in rows; and, where the number of trees of a variety is small, the practice is not objectionable. But when, as in one of my own orchards, a variety is strung out in a single row of a hundred rods in length, the carrying of fruit, baskets, and ladders becomes a large percentage of the time spent in gathering, and too costly for good economy.

Thirdly, we find combined with this system of row-planting a later device of ingenious horticulturists, whereby the ground is to be fully occupied. Peach-trees are planted between apple-trees, dwarfs between standards, and the like; and trees of two or three different species or genera are placed on the same ground, and necessarily subjected to the same treatment as regards cultivation. This system, also, I have pretty thoroughly illustrated in my own orchards, and find unsatisfactory. In an orchard of apple-trees planted forty feet apart, and filled in with peach-trees at twenty feet for instance, I find that there occur years when the peach-trees need cultivation, and the apple-trees do not, and conversely.

In view of the objections to these various practices, I am planting my later orchards in squares, each square, if possible, containing one variety, and being separated from the adjoining variety by a double space. In planting a peach-orchard of the varieties recommended by Isaac Pullen in the Report of the Commissioner of Agriculture for 1865, I planted a hundred trees of a variety sixteen feet and a half by sixteen feet and a half, with a space of two rods between varieties. Beginning with the earliest

in the north-east corner, we find varieties to succeed each other, square after square, going to and fro across the orchard; so that the next variety



PLAN OF PEACH-ORCHARD.

to pick will be adjoining the square where the baskets, ladders, &c., were last used.

The advantages of this mode of planting I have already hinted at; but I recapitulate.

1. It gives an opportunity for *special cultivation* of a particular species or variety. The Early Tillotson among peaches, the Carolina Red June among apples, and other varieties, have their peculiar characteristics or defects, that must be met by a peculiar management which is not always desirable for other varieties in the same orchards. In such case, the advantage of having a variety isolated in a separate square is obvious. Much more is this the case when we come to trees of different species or genera. The cherry, in our climate, needs a later cultivation to retard the ripening of its wood and the shedding of its leaves than would be desirable for the pear or apple.

2. It has a special advantage in facilitating the gathering and packing of fruit. A hundred trees of Troth's Early may be picked and carried to the centre of the square, and there packed without the picker needing to carry a single basket of fruit more than seven rods. The pickers are under the more immediate supervision and control of the orchardist, and the work can be better as well as more quickly done.

3. Trees of different varieties or species, and even vines, may all be planted separately in a common orchard, and receive a common or separate cultivation as may be desired.

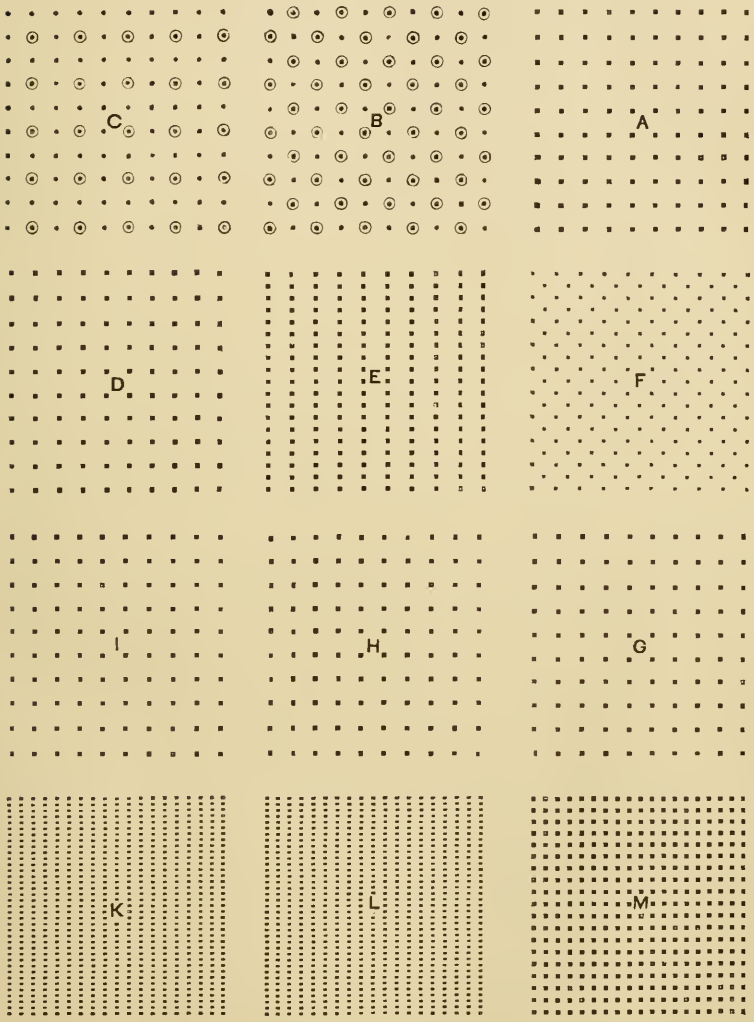
As seen in the accompanying sketch, the plough may be run from end to end of the field if desired, or each square or block may receive its special and peculiar cultivation.

As may be seen by reference to the figures, it is necessary to take some number of feet as a common multiple or unit from which to work. One rod seems to me to answer the purpose best as the ordinary land-measure, and as adapted to the greatest number of kinds of trees.

The close planting of the apple and the pear affords self-protection during the youth of an orchard, and may be remedied by thinning the trees as indicated when the orchard gets older.

The spaces running east and west I have occasionally omitted, leaving the north and south openings only. These spaces, especially those running north and south, are of value in our climate for *ventilation* during the hot and humid weather of June. All the fruits, it will be noticed, have been arranged with the view of facilitating the passage of the south wind and breaking the west wind.

By planting in rhombs, or lozenges, the equilateral triangle or hexagonal



PLAN OF FRUIT-GARDEN.

A. Apples planted 16½ x 16½ feet. B. The same thinned to 23 x 23 feet. C. The same thinned to 33 x 33 feet. D. Pears, 16½ x 16½. E. Pears, 16½ x 8¼. F. Pears, 11½ x 11½. G. Peaches, 16½ x 16½. H. Plums, 16½ x 16½. I. Cherries, 16½ x 16½. K. Currants, 8¼ x 4⅛. L. Blackberries, 8¼ x 4⅛. M. Grapes, 8¼ x 8¼.

plan of arrangement may be adopted, but hardly with so convenient results.

ALTON, ILL., Sept., 1869.

VARIATION OF FLOWERS FROM SEED.

By Francis Parkman, Jamaica Plain, Mass.

Of the two methods of producing new varieties of flowers, — namely, hybridization and "sports," — the latter produces results almost as striking as the former. By "sports" is commonly meant the changes which plants undergo when raised from seed, or which, by a freak of Nature, sometimes make their appearance in some single branch or flower different from others of the same plant.

For ten years past we have experimented with a single tribe of plants, the *Delphiniums*, or perennial larkspurs ; and we will now give some of the results, in order to show what changes may be produced in some species and genera without any use whatever of hybridization. Different genera and different species differ very much, it is true, in their capacity of development or of change by this means ; but nearly all are capable of it in some degree.

Eight or nine years ago, we raised a handsome seedling from the variety of *Delphinium* called *D. perfectum novum*. It was double, and of a clear sky-blue. From this single flower have proceeded all the varieties which we shall mention. Not that we have not tried the same experiments with many other *Delphiniums ;* but we have found in none of them such a tendency to "sport," or to assume new forms and colors. This single flower has produced more good varieties than all the rest combined. First we raised from it a variety like itself in color, but more double and more compact in habit. From this last variety we raised a great number of seedlings, one of which was different from all the rest. It had no beauty ; but it was white, — a color which, as far as we know, had not hitherto appeared in this section of the *Delphinium* family. So we carefully set it aside, and raised seed from it. Most of the seedlings reverted to the sky-blue of the original variety ; but one of them was altogether distinct. It was of a light blue shaded with pink. The flower was as round and as double as that of a double feverfew ; and the plant never exceeded two feet and a half in height, while the parent was five feet. Being so very double, it bore no seed ; and nothing, therefore, could be produced from it.

Among the seedlings of the original sky-blue variety were two or three of a deep cobalt blue. These were all single, with the exception of one, which showed the slightest possible tendency to become double. We carefully saved all the seed from this one, and raised from it about two hundred young plants. The greater number of these were single and of a bright blue color, some white in the centre, and some black; but one of them was a superb double flower, with the central petals purple, and the outer petals dark blue. It produced its flowers in immense masses, and grew eight feet high. It bore seed tolerably well; and we raised from it another generation of seedlings. Most of these proved good for nothing; but one of them bore flowers which resembled the parent, excepting that the coloring was brighter, and the flower broader and flatter. The plant was also different in habit, and much weaker in growth. Another among the seedlings was of a lilac color, but the flower was single; and we have never succeeded in gaining a double variety of this color.

To return again to the original seedling. We raised from it a great number of double varieties of a clear sky-blue, some of which produced in the second generation seedlings almost uniformly like themselves; while others, on the contrary, though to all appearance exactly similar, would rarely give any thing but single flowers. Among their offspring, however, are two or three white double varieties, one of which has a decided tinge of rose, — a color hitherto unknown among the perennial larkspurs.

To sum up, then, the results: One sky-blue larkspur has produced flowers of a deep blue, of a sky-blue, of blue tinged with rose, of a lilac, of a white, and white tinged with rose; and these flowers have exhibited diversities in form equal to their diversities in color, while the plants have varied in height from two and a half to eight feet, and the foliage has in some cases been so distinct, that the plant might be supposed to belong to a different species.

THE AMERICAN POMOLOGICAL SOCIETY.

No gathering of horticulturists in this country is looked forward to with more interest than the biennial meeting of the American Pomological Society. And certainly the late meeting at Philadelphia was no exception to the rule, that these gatherings have from the very commencement increased in interest, and justify the eager anticipations entertained in regard to them. The prosperity attained by this society now surpasses the most sanguine hopes of its founders; and it was most gratifying to find that no less than sixteen of those who participated in the first meeting of the American Congress of Fruit-Growers twenty-one years ago, including its first president (who still continues to fill the chair), were at Philadelphia to celebrate the arrival of the society at the age of manhood, and to rejoice in its prosperity. Instead of the twelve States represented twenty-one years ago, we this year found more than two hundred delegates, representing thirty-four associations from twenty-five States and Territories, some of which were unknown even by name at the time of the first meeting; and from one of these came one of the finest displays of apples and pears in the whole exhibition. We allude to the fruit from Kansas, unsurpassed for size, beauty, and freedom from insects. A great variety of apples were also shown from the young State of Iowa; and the specimens of California fruit presented by the president attracted much attention.

The combined exhibition of fruit before the Pennsylvania Horticultural Society and the Pomological Society undoubtedly constituted the largest collection of fruits ever gathered together in this country; and was well characterized by President Wilder in his address as "a cornucopial display," numbering more than three thousand two hundred dishes. The effect upon entering the spacious and magnificent hall, crowded with the choicest fruits and flowers, was bewildering, and almost oppressive with the thought of the impossibility of doing justice to such a vast collection in the few days during which it could remain together.

The finest pears were from Norfolk, Va., and Wilmington, Del.; some of the Duchesse d'Angoulêmes from these places weighing twenty and twenty-one ounces each, and giving a foretaste of what we may expect when pear-

culture in those places, now in its infancy, is fully developed. The collections of peaches and native grapes rather disappointed us, as they were far from equal to those shown at the St. Louis meeting two years ago.

The show of pot-plants, for which the Pennsylvania Horticultural Society is renowned, was not as good as usual, the larger specimens having been excluded in order to give room to the collections of fruits; and those contributed were placed under the galleries, where the light was unfavorable for the display of their beauties. Still the collection of caladiums, crotons, lycopodiums, fuchsias, &c., was very fine; and the century-plant bloomed in honor of the occasion. Upon the stage at the end of the hall were arranged a great variety of choice plants, which, with a miniature cascade and beautifully painted scenery in the back-ground, produced a charming effect.

The address of the president, which was listened to with much interest and applause, consisted mainly of a review of the progress of pomology since the commencement of the science, and especially its wonderful growth since the establishment of the society, with notices of the revision of the catalogue, the effects of the inconstancy of the seasons, the deterioration of varieties, &c. Appropriate notice was also taken of deceased members, and a hearty greeting given to all, especially the Southern members, who appeared at the meeting of the society for the first time after long absence.

The last two days of the meeting were devoted to the discussion of the different varieties of fruit; and the debates, when collated and published, as they will speedily be by the secretary, will form one of the most interesting pomological documents ever given to the world, and advance the catalogue another step towards completeness. Indeed, the value of these reports is already recognized, as not merely local, but universal throughout the country; and a complete set forms a treasure for the library of the pomologist. We have before us now a copy of the first report, a pamphlet of about fifty pages, in strong contrast with the stout volume to which it has since grown.

We are not surprised that the success of this society should have generated the idea, which was suggested by one of its most prominent members, of extending its object, so that, instead of embracing simply pomology, it should include general horticulture, thus forming a national horticultural society.

The suggestion shows the strong hold which the society has obtained on the affections of its members; and we like the idea so much, that we regret to say that we fear it is impracticable. The time during which pomologists can afford to be away from their orchards and nurseries is even now all too short to do justice to the many subjects claiming their attention; and we believe, that, if a general horticultural society were once formed, but few years would elapse before the absolute necessity would be discovered of dividing the subject, and returning to the original plan.

The hospitality of the Pennsylvania Horticultural Society, and of other associations, as well as individuals, was unbounded; invitations to visit the Academy of Natural Sciences, the Academy of Art, Fairmount Park, and other places of interest, being received, and many availing themselves of the opportunities offered. The reception of the members of the society in Independence Hall by the mayor, with the short and appropriate speeches delivered, was one of the happiest occasions of the kind we have ever known; and, on Friday evening, a fitting close was given to this pomological festival by a grand banquet at Horticultural Hall.

But, after all, perhaps the most profitable part of this meeting is that which is most difficult to embody in words. The informal meetings, where the contact of mind with mind is closest, in twos or threes, or in larger groups, discussing the merits or faults of the different fruits over the specimens on the tables; the comparison of the different requirements of cultivation caused by different circumstances of soil and climate, — those who have joined in them will have no difficulty in understanding our meaning, — are at least of quite as much influence for good as the reported sessions, and fulfil the design of the founders of the society, along with its other objects, — "to promote a cordial spirit of intercourse among horticulturists."

The next meeting is, by unanimous vote of the society, to be in Richmond, Va.; thus realizing the hope expressed by the president, "that soon our meetings might be held in the cities of the South, and that to them, to add to the fruits of Northern climes, men shall come up, like the searchers of the promised land of old, laden with grapes and pomegranates and figs."

STRAWBERRY-CULTURE.

By Augustus Parker, Roxbury, Mass.

Having had some experience in the raising of strawberries, I offer you this as my method of cultivation. I set my plants about the first of May, about a foot apart in a single row, and the rows four and a half feet apart, on good, well-manured ground. I keep the cultivator going between the rows till about the 8th of July, when the runners begin to run; and then go over the ground with a rake, and make it level: after this, I go over the beds, and place the runners so that the plants will be as near four inches apart as I conveniently can. With me the runners cover all the ground between the rows. Keeping the ground light till you set the runners gives the young plant a chance to make good roots, which stand the dry weather the next summer when they are in bearing. If you let the ground get hard for the new plants, the roots will be short, and the plants will not be able to carry their fruit to the size and quantity it otherwise would. I cover my beds, when they are frozen in the fall, so that I can drive my team over them without leaving a mark, with fine, light horse-manure; *cover* as *lightly* as *possible*, and yet have *them covered*. In the spring I let the plants come up through the manure, which serves as a mulching, to keep the berries clean. As soon as the plants are started enough in the spring to see the *old* plants that were set the spring before, I put a line on the beds, and take out the old row, and make the path about fourteen inches wide, so as to keep the pickers in their proper places. I do not set every year as some growers do; but, as soon as I get through picking, I dig or plough up the sides of my beds to a strip eight or ten inches wide: from this strip new runners will start, which I set over the ground as at the first season. I cart off all the plants I plough up, and make the ground as light as possible; then, the next spring (of course, manuring in the fall as above), I take out the old strip with some of the new for my path; and thus I keep my plants one-year old, which is the best for bearing. I *never* allow weeds to grow at any season of the year. I have had the greatest success with the Brighton Pine.

Roxbury, Mass., January, 1869.

GOSSIP FROM SOUTHERN IOWA.

By "Hawkeye," Burlington, Io.

Upon reading "J. M. M.'s" article on grapes in the December number, I was prompted to ask, "Well, what grapes *do* succeed in Massachusetts?" For the sad tale seemed all one way, — a series of disappointments. Here we have no such lugubrious experience to relate. Last year (1868) was an unusually good grape-season, though the previous one had been excellent. Catawbas always ripen perfectly, and did so last season, with no sign of rot upon them. As some of our vineyards are more than fifteen years old, we do not consider our statements on this head at all premature. We consider the Catawba our very best wine and table grape; and that, I believe, was the testimony at the American Pomological meeting at St. Louis in 1867.

Where the Catawba will succeed, any other grape ought to do well. Yet we fail with Delaware and (shall I say it?) Iona. How many thousands of dollars have been wasted on the first, I shall not attempt to say; but I know of many vintners who have lost years of priceless time in trying, in vain, to grow it. The Concord, of course, does well. So does Hartford Prolific, our best early grape. It holds its berries well till it gets to market, and never drops them till past its prime and its season.

One of the *quidnuncs* of "The New-York Tribune" recently calculated the grape-soil of this country at a million of acres. There is four times that amount of as good grape-land as ever the sun shone on, in Iowa alone, if you regard land that will grow Catawbas and Concords as grape-soil. We certainly have ten thousand square miles, out of our fifty-five thousand, of six hundred and forty acres each, in the south part of the State alone. I recently saw what was probably the first Concord vine ever brought to this State. It cost five dollars in 1854, has been twice transplanted, and has never failed to ripen a crop. It is a hundred and thirty miles in the interior, west of the Mississippi; is planted in common prairie soil; and bids fair to live as long as it already has, at least. All along the Mississippi River, from St. Louis to Rock Island, is any quantity of the best of grape-land. North of the Lower Rapids (Keokuk), the Catawba flour-

ishes as well as it can anywhere, ripens perfectly, and only rots occasionally when kept too closely pruned by the Germans. South of that point, that grape does not do well. It is all folly to be paying a hundred dollars and more an acre for lands about the New-York lakes, and Sandusky, O., when the supply is literally inexhaustible at less than one-tenth that price in just as well tried and perfectly proved latitudes. Hereabouts, we regard ourselves as veteran grape-growers, having been at it twenty years and more; beginning when Isabellas and Catawbas clambered all over the elms uncared for, and yielding barrels of luscious fruit to the vine. This they have long since ceased doing; the climate having apparently changed so much as to necessitate closer pruning, and covering every winter.

Your correspondent from Keosauqua, in this State, is certainly correct in having ascertained that autumn-planted trees will not do in Iowa. Physiology ought to have taught him that. A tree, though dormant in winter, is full of warmth and life. It is constantly exhaling moisture, though less, of course, than during summer. If the rootlets are destroyed, as in removal, the sap cannot be supplied equal to the demand, and the tree dries up, a dead stick. It is not the case that these rootlets form in autumn, when early planted out, enough to carry the tree through the winter.

Strange to say, trees bought in autumn, and buried in the ground, branches as well as roots, do better, are more certain to live, and make more growth, than when left out till spring, and then moved. They come out more vigorous and fresher, and more completely uninjured from winter casualties.

The reverse is the case south of the Ohio River. There the summers are so hot, from February to November (especially in the Gulf States), that trees must be set out in autumn, to get established during winter, or they will burn up with heat. Here it is very different. Let your Northern readers, then, always buy their trees in autumn, but never set them out till spring.

During a recent sleet, which lasted unusually long, I was much interested at noticing the great amount of warmth in live trees. As soon as the thaw began in the least, it commenced at the tree, and the ice scaled off in long pieces the shape of the limb, like a casting. This was not the case with a dead tree in the same garden. The ice adhered to it, and the thaw began from the outside. I think it always best to set out grapes in autumn,

and cover up snugly all over with soil. This is new practice here, but will be adhered to by those who have tried it. The vine is then perfectly settled and packed around by the time it is ready to begin to grow, and nothing is then necessary, except to strip off the friendly covering, and allow it to commence the labors of the season.

I do not like to indulge in vain boasting, or rash statements; but I can assure your readers, that, in the south-eastern corner of this State, grape-growing, especially the Catawba, is an established business. Literally, hundreds of small vineyards, aggregating thousands of acres, are owned and cultivated by small proprietors, mostly Germans, making thousands of casks, of three and four hundred gallons each, of the choicest and finest tipple that ever passed the lips of man. The making of these huge casks is a specialty here, and they are shipped to all parts of the country. The differences of climate, soil, and vines, from those of Europe, are closely watched by our intelligent growers. We have absolutely no insects at all which prey on the vines (but a few exceptional cases of rot); and year by year they feel more and more encouraged, not only to set out more vines, but to get additional crops from those already growing, by more skilful care and management. This business, already vast, is more rapidly on the increase with us than any other; and the purest of wines are annually becoming more plentiful and abundant.

January, 1869.

THE WILSON'S EARLY BLACKBERRY.

This variety was discovered by John Wilson of Burlington, N.J., about 1854. The bush partakes of the habit of both the low and high blackberry; some of the shoots being erect and branching like the New Rochelle, and others without branches, slender, and trailing on the ground like the low blackberry, and indicating a hybrid between that and the high-bush species. The trailing shoots sometimes take root at the tips. Wood downy. The fruit is very large, good specimens measuring an inch and a quarter in length by about an inch in breadth, while the largest are an inch and a half long. Form somewhat irregular, tapering towards the apex; grains mostly

large, but with some small ones mixed in ; flavor quite acid until perfectly ripe, when it is rich and sprightly.

The specimen from which our drawing was made was kindly furnished

WILSON'S EARLY BLACKBERRY.

us by Messrs. F. and L. Clapp of Dorchester, who have one of the best orchards and fruit-gardens in Massachusetts, and who received the first premium for this fruit from the Massachusetts Horticultural Society.

THE MEXICAN EVER-BEARING STRAWBERRY.

By George W. Campbell, Delaware, O.

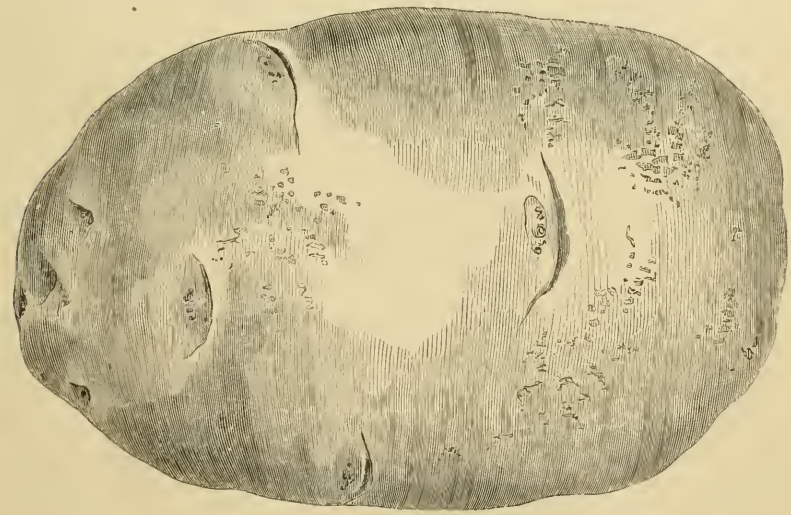
In the recent somewhat lively discussion upon the claims of this so-called new strawberry, attention seems to have been principally directed to the question as to whether it is really *new*, or simply the old Alpine. However interesting this may be to the botanist, it is of little importance to the fruit-grower as compared with the question, whether it is a berry of good quality, and of character, and habits of growth and productiveness, such as render it desirable and profitable for general culture for the garden or market. It is many years since I discarded the Alpines for general worthlessness, regarding none that I have ever tasted as of any value. I graduated on Stoddard's Washington Alpine some twenty years ago; and I have never found any difference since then, except in the *names*, of Newland's Mammoth Alpine, and more recently in Higley's Ever-bearing, and now in the Mexican Ever-bearing. To the appreciation of an ordinary observer, and so far as I can determine, they are, if not identically the same, so nearly allied as to pass for the same variety, — the old *Fragaria vesca*. This variety is said to perpetuate itself true from seed; and, in the case of the before-mentioned Stoddard's Washington Alpine, the originator had planted seed of the old Alpine in a boggy corner of his garden, which had been filled up with rich earth some eight or ten feet; and he produced both plants and fruit so extraordinary in size, that he really believed he had a new and valuable variety. As soon, however, as the plants were removed to ordinary garden-soil, with common culture, it degenerated into its normal character, and became simply the old Red Alpine. So of Higley's Ever-bearing and the Mexican. I had the former a year ago last winter or fall, and have grown only the Mexican the present season. A comparison of them with the fruit and plants exhibited at the late session of the American Pomological Society at Philadelphia convinces me that my former impression was correct; namely, that they are identical. Now, as to the value of this berry, by whatever name it is called, my experience teaches, that in ordinary soil, and with ordinarily good culture, it is utterly worthless. It is singularly unproductive, never yielding any thing like a decent

crop; and the few straggling berries it produces are poor, small, slender, and insignificant in appearance. But when I think of its vapid, weak, vinegar-and-water flavor, my only regret is that it bears at all; and if the letter N could be placed before the names of this whole class of "*ever*-bearing" trash, and represent their permanent character, the fruit-growing community would, in my opinion, suffer no loss.

This imposition of old and especially worthless varieties of fruits upon the public by new names and extravagant misrepresentations, whether by ignorance or design, should be promptly met and exposed, and, so far as possible, the public protected from spending money for *novelties* that are worse than worthless.

BRESEE'S NO. 5 POTATO.

We give this month an illustration of another of the extraordinary series



BRESEE'S NO. 5 POTATO.

of potatoes produced by Mr. Bresee. The cut shows the size and shape to be excellent; and though in one test its quality was not marked so high

as the Early Rose and some others of Mr. Bresee's seedlings, yet these have proved so fine, that it is possible for a variety to possess much merit, though it may not rise to the highest notch; and such is the case with that now figured. It has not yet received a name.

We have spoken of the series of potatoes raised by Mr. Bresee as extraordinary; and we think every one, who gives the subject even a moment's consideration, will agree with us, that the vein on which he has struck is fortunate and rare. We doubt not that his success will stimulate many to attempt the production of improved potatoes and other vegetables, and with the greatest benefit to horticulture; for even those who are unsuccessful in originating valuable kinds may hope to throw light on the principles which govern the production of new varieties. The potato, being, unlike most of our vegetables which are raised from seed, propagated from cuttings or eyes, and its seedlings sporting into new varieties, — in both these points, resembling our fruit-trees, — offers, like them, a most tempting field for experiment.

Mr. Bresee's description is as follows: "Originated from the Garnet Chili ball in 1862. It is a good-sized, handsome potato, a little longish, but not long, and somewhat flattened. Skin white, dotted with small purple spots, and somewhat rusty-coated; eyes but little sunk below the surface, slightly pink; the eyes of the seed-end of many specimens are rolled somewhat upon one side. Vines of medium size. Of good table quality."

CRITIQUE ON THE OCTOBER NUMBER. — *Carnations and Hollyhocks*, by Rev. Henry Ward Beecher, who, in talking about flowers, speaks out just what he thinks, — just as he does when talking about any thing else. Of course, he is partial to generous flowers : a man with such universal sympathies might and no doubt does admire the magnificent but costly flowers produced in the hot-house or stove ; but they never could be favorites like the flowers that every-body can grow. But I must give a warning to growers of carnations and holly-hocks in more northern locations than Mr. Beecher's. No doubt, they survive the winter in his garden without covering ; but, as far north as Boston, any one who expects them to go through without protection will find himself mis-taken.

Autumn Transplanting, especially for large trees, has *every* advantage over spring transplanting ; at least, such has been my experience. It is not only a more convenient season ; but trees set in autumn succeed better than those set in spring. If you are under the necessity of transplanting large trees, take my advice, and do it the last of October, or early in November.

I cannot conceive that there can be any attraction in trees offered for sale, as they frequently are, in leaf and blossom. Such exhibitions, to me, are even painful. In the withering foliage and drooping flowers I can see nothing but the certain promise of a sickly growth, if not an early death.

Mr. Breck offers us this month, from his floral treasures, the *Drummond Phlox*, — a flower which would have delighted the heart of old Gerarde, could he but have seen it ; but in his day it bloomed unknown amidst the wilds of Texas. And the present generation who have always seen it growing can hardly realize the gayety which its acquisition has imparted to the garden. Probably there is

not a single plant introduced within the same time so universally adapted alike to the humblest and the grandest garden.

Hybrids of Lilium auratum. — A record of experience. Just such articles are wanted ; and the more, the better. We wonder how many of the readers of the Journal ever think of the labor, the care, the patience, and last, but by no means the least, the money, required to enable one to write such an article. Teachers in floriculture can never count the cost : their labor is for love ; and small the recompense they receive.

Mr. Hyde's article on *Celery* leaves nothing to be desired. Formerly a luxury, this vegetable is rapidly becoming one of the necessaries of life ; and I am glad to see its cultivation and general management presented so fully, and yet so intelligibly, before your readers. Celery should be more commonly grown in our small gardens ; and I doubt not it soon will be. As the writer very truly suggests, its cultivation is neither difficult nor expensive ; and, judging from a recent examination of the plantations of some of our best growers, I should certainly decide that there was "little toil and much money" in the crop. Mr. Hyde recommends, and most market-gardeners in this country practise, earthing at intervals ; while the most successful English cultivators insist that the finest celery is produced by permitting the plants to make their full growth, and then earthing at once. I have thought that climate might have something to do with the question, and possibly both parties be in the right.

Canker-Worms. — It cannot too often be impressed on the minds of fruit-growers, that the price of all good fruit is constant, persevering, unremitting warfare with insects ; and the canker-worm gives us as hard a fight as any thing. I advise fruit-growers by all means to put the boxes and troughs around their trees ; for, though the first cost is greater, when once done it is much less trouble, and far more effectual, than the belts of tar or ink ; for the latter, even when followed up thoroughly night and morning, week-days and Sundays, will, if the insects come in such myriads as they sometimes do, still permit a sufficient number to ascend to destroy the foliage pretty thoroughly. One word to those whose trees are attacked for the first time. Don't wait for them to increase ; but put your trough of oil around them as soon as you see the first grub. It is the cheapest thing you can do.

Meteorology in Horticulture. — Why should we not discover the law of storms, and, indeed, of every alternation of the weather ? We never have known them, but, instead, the weather has been deemed the most fickle of all earthly things ; and so people have settled down into the belief that they never can be known. Surely no man will presume to doubt that the changes of the weather are governed by fixed laws ; and, to admit that, appears to me to involve the admission that they will some day be known. This, however, is not necessary to a knowledge of the effects of the weather on the various crops of the garden and farm, however necessary it may be to the prevention of their injurious influences. I think Mr. Huntington's observations prove the truth of his views : and the next thing is, how to guard against the rainy weather while the grapes are in flower ; and, if Mr. Saunders's copings will not do it, somebody's invention will soon find out what will.

Pears at the West. — If I understand Mr. Foster rightly, he now considers pears more profitable than apples, because more productive ; but adheres to his former view, that the apple is more healthy. I am glad to know that the pear is growing in favor, though sorry to hear that the apple is less productive. I see that some of the best writers on pear-blight maintain that one variety is no more subject to it than another ; but such has not been my experience, and Mr. Foster's testimony confirms my view Certainly the fungus which hardens the skin of the White Doyenné and other pears, causing them to crack, is generally confined to a few varieties, leaving others entirely free. And why should not the fungus, which the best authorities hold responsible for the blight, also have its favorite varieties ?

No doubt, storms at the time the pear is in blossom would affect it as unfavorably as the apple. But the pear blossoms before the apple ; and was not the bloom of Mr. Foster's pears over before his apples blossomed and the storm came ? His statement that the cold rains occurred at the time of blooming, *and soon after*, appears to favor this explanation.

Tree Weigelias. — An excellent plan for growing these shrubs so as to make the most of the room in a small garden. But I want to go farther, and train all my weigelias, however low, to a single stem ; and not only weigelias, but lilacs and syringas and spiræas, and every thing else that I can : for there is nothing that I abominate more than a bunch of stems, from which you cannot clean out the weeds if it grows in a border, nor cut the grass if it stands on the lawn. A clean stem to an ornamental shrub is as important as a clean stem to a currant-bush, where clean culture is aimed at.

Harvesting Early Potatoes. — Your correspondent remarks that he has never been troubled with potatoes rotting. A rare experience, truly ! He adds, however, that he restricts himself almost exclusively to the growing of early sorts ; and I am inclined to think that in this fact lies the great secret of his success. Early varieties, planted early, will be fully ripened at the close of July ; and, as potato-disease rarely if ever attacks the plants before the beginning of August, it follows as a matter of course that the crop will be sound and healthy. But how do our early potatoes as a class compare with the later varieties in quality ? Are they equally productive ? and do they come to the table in as fine condition in the spring and early summer months ? If so, there can be no question as to the best course to be pursued : Select early varieties, plant early, harvest as soon as fully ripe, and " store immediately in a cool, dark cellar."

Boston-Market Tomato. — A fine engraving of an excellent variety. The Boston-Market and the General Grant need no recommendation. They meet the requirements of market-gardeners as regards productiveness ; and they please their customers by their good size and form, rich color, remarkable solidity, and excellent quality. But what has become of the early varieties, so many of which have been introduced within the last few years ? Allow me to say, that, in my opinion, a tomato ten days earlier than the old Large Red, and worthy of cultivation, is yet in the future. I speak advisedly, throw down the gauntlet, and challenge proof.

How to pack Flowers for a Journey. — Well illustrated, and suitable for bou-

quets; but the best way to carry cut-flowers is to lay them in an air-tight box upon a piece of damp cotton, and mix with them a little light, damp moss. We have thus preserved flowers for days. Yet remember that the petals of some flowers, such as camellias, become discolored if wet. So regulate the moisture according to the flowers.

Fifty cool Orchids. — Oh that any one would take up orchid-culture, and show us the wonders that can be done! What more attractive plants are there? what more showy, more delicately beautiful, or more fragrant? Stir up the amateurs, Mr. Editor, and interest them in orchid-culture. *Bismarck.*

PRICES OF FRUIT. —Three bushels of Seckel pears were lately sold in Boston for twelve dollars per bushel. During the height of the peach-season, so many were brought from the South, and consumed to the exclusion of other fruit, as to greatly reduce the price. We know of fine grapes grown under glass failing to find purchasers at any price at that time.

FRUIT IN TEXAS. — I think, after ten years' experience, that Texas is destined to be a great fruit State. The grape is a perfect success. Nearly all the leading varieties do well here; while such kinds as the Concord, Iona, and Israella are very much improved. The Delaware is ripe here by the 20th of June; Concord in July. Pears succeed admirably. I have taken fruit, from eight to twelve ounces in weight, from dwarf pear-trees only two years old. We can grow fine apples; and as for peaches, we can at least equal those grown anywhere in the world. With the strawberry I am very successful. I have most of the leading varieties, and nearly all do well. *W. W.*

BRENHAM, WASHINGTON COUNTY, TEX.

GRAPES IN MISSOURI. — *J. E. Tilton & Co.*, — Enclosed you will find fifty cents for the paper of seeds you sent me. You will please send the two plants of the President Wilder Strawberry this fall. I have about half an acre of grape-vines in cultivation, of forty-two varieties. This spring has been very unfavorable for grapes. We have had considerable rain. I shall make about half a crop. The Concords have rotted about one-third; Catawba, one-half; Mary Ann, one-fourth; Delaware, one-eighth; Diana, one-sixth; Logan have nearly all rotted; Taylor, one-fourth; Cassady, one-eighth; Rogers's No. 1, one-eighth; No. 3, one-fourth; No. 4, one-half; No. 19, one-fourth; North-Carolina Seedling, one-third; Hartford, five-eighths; Perkins, one-eighth; Hettie, about one-sixth; Maxatawney, one-third; To Kalon, one-half; Clinton, one-fourth; Herbemont, one-half; the Isabella has escaped entirely. Some of my vines have taken the blight on the tip ends. This section of country is well adapted for the grape. We have about five acres, I suppose, in this county, in grapes. *E. W. B.*

LEXINGTON, MO., Sept. 1, 1869.

FRUIT-TREES may be freed from moss by dusting with quick-lime. It may be done at any time, except when the trees are in blossom. They should, immediately before applying the lime, be made quite wet by syringing, as the lime then adheres to the stems and shoots.

CALIFORNIAN WINES. — Mr. Charles L. Brace, in his recently-published book, "The New West," speaks very plainly about the wines and vineyards of California, and tells some truths which are not much to the credit of the Californian vignerons. He says that most of the vineyards are cultivated by small growers, who have seldom if ever tasted a good wine, and who imagine their own the very best wine in the world; that the wines have suffered from being over-praised; that instead of being weak, and of a high aroma, they are deficient in aroma, and altogether too rich in alcohol; that they do not compare favorably with the good and light table-wines of Europe; that in fact, on a broad scale, wine-making in California has been a failure, shown by the fact, that, with a production of three million gallons, only sixty-three thousand dollars' worth were exported in the last six months of 1867, or thirty thousand dollars' worth *less* than in the same period of 1866; and finally, that, in many places, the price has fallen to one-tenth, and even to one-thirtieth, the price of French claret.

Mr. Brace further says, that the fault does not inhere in the grapes, the soil, or the climate, all which are extremely well adapted to wine-making, but is to be found, in his opinion, in a lack of honesty and thoroughness, both on the part of the manufacturers and on the part of their agents. He says that the Port is doctored, and the Angelica is prepared for us (at the East) by adding sixteen or eighteen per cent of brandy; that the casks are often carelessly coopered, thus injuring the wine at the start; that the wine is often not old enough, and ferments on the passage; that it is re-doctored in New York, and then palmed off on the public for pure Californian wine. Then there are other difficulties. Mr. Brace says he saw one wine-cellar occupied half as a *stable*, and half as a wine-store; and he justly adds, that any one who knows any thing of the sensitive nature of fermenting wine can judge of the effect of the stable-odors on its quality. Too much dependence has been placed upon one variety, the Mission Grape, which the writer says is the favorite, because they tried it first, and it happened to succeed.

Vines are planted about six hundred and eighty to the acre, trained low, and seldom staked. The yield is from four hundred to a thousand gallons per acre.

The Zinfindal, White Muscatine, and White Riesling are among the kinds grown for wine.

Innumerable experiments have been made at great cost, and countless failures experienced, in making Champagne wine; but success seems now not far distant.

It is curious to learn that the Catawba Grape is a great favorite with some growers in a climate where the Black Hamburg and the Muscat of Alexandria can be grown to sell for eight cents per pound.

Such is the bad reputation of the Californian wines at home, says Mr. Brace, that, out of four hundred thousand gallons made by the Anaheim Colony, two hundred and fifty thousand are still in bond, and the ruling price is twenty-five cents per gallon.

In spite of all these mistakes and crudities, the writer we quote makes the safe prophecy, that California will come out all right, and be as vast a vine-growing and wine-making State as France herself.

Manures: how and when to use them. — The best method of using stable or barnyard manure for corn or potatoes is to haul it fresh from the cellar in the condition in which it rests in the vaults, spread it upon the ploughed field, and harrow it in with a Geddes harrow. This is what is called "long manure," and is a form, which, according to the opinions of many farmers, is unsuited to immediate use: also it is objected, that in spreading fresh manure upon ploughed fields, and covering it only superficially with earth, much of it is lost by *evaporation;* or, more correctly speaking, certain volatile, gaseous constituents rise on the breeze, and are wafted away. In our view, both of these notions are incorrect. The excrement of animals must undergo a kind of fermentation, or putrefactive change, before it is assimilated by plants; and it is better that this be carried forward in the field, as there it is in contact with the soil, which is greedy to absorb all the products of the chemical change. Creative power has bestowed upon dry earth prodigious absorptive capabilities. If a lump of fresh manure as large as a peck-measure is placed upon a ploughed field, uncovered, and allowed to ferment or decay in the open air, the absorptive powers of the earth are such, that it will actually *attract towards it* ammoniacal and other gases, and thus rob the atmosphere of its natural volatile principles. A film of earth no thicker than the rind of an orange, placed over a lump of manure, will effectually prevent loss of manurial products, under all possible circumstances. It will be agreed, then, that a harrow is equally as effective as a plough in protecting manure in the open field. It is better to have the manure near the surface, as the rains can reach it, and dissolve the soluble salts, and, by percolation, carry them *down* to the hungry roots of plants. Long manure is *not lost* when deeply turned under by the plough: but the farmer *does not* secure the whole value of his dressing under this mode of treatment in any case; and, in some soils, the loss is a most serious one. In the process of soap-making, it becomes necessary to set up a leach. Now, the farmer will not attempt to exhaust the tub of ashes of its potash by forcing water into the bottom, and dipping the liquid off from the top. The natural percolating or exhausting process is *downwards*, in accordance with the laws of gravity. The soluble alkalies and salts are driven downwards; and, in the case of the leach, we must have a vessel ready to receive them at the bottom; and, in the case of the same substances leached from manure, we must have the manures so placed that plant-roots will be at hand to absorb them before they pass beyond their reach.

Manure is never so valuable as when it is fresh. It then holds in association not only all the fixed soluble substances natural to the solid excrement, but much that is of great value, found only in the liquid. It is in a condition to quickly undergo chemical change; and the gaseous, ammoniacal products secured are double those resulting from that which has been *weathered* in a heap out of doors for several months. — *Journal of Chemistry.*

Structure of Fruits. — Some fruits, as they are commonly called, are not fruits at all in the strict botanical sense. A strawberry, though one of the choicest *fruits* in the common acceptation, is only an enlarged and pulpy receptacle, bearing the real fruit (that is, the ripened pistils) scattered over its surface.

Mulberries, pine-apples, and figs are masses of many fruits, with a pulpy flower-stalk. The fig is a peculiar form, namely, a hollow receptacle, bearing the flowers concealed inside; and the whole eatable part is this pulpy common receptacle, or hollow thickened flower-stalk. These are all called multiple or collective fruits, being masses of fruit resulting from several or many blossoms aggregated into one body. A *strobile*, or *cone*, is the peculiar multiple fruit of pines, cypresses, and the like; hence named *coniferæ;* viz., cone-bearing plants.

Simple fruits are formed by the ripening of a single pistil. They are classified as, first, fleshy fruits; second, stone fruits; and, third, dry fruits.

In *fleshy fruits*, the whole pericarp, or wall of the ovary, thickens, and becomes soft (fleshy, juicy, or pulpy) as it ripens. Of this the leading kind is the *berry;* such as the gooseberry and currant, the blueberry and cranberry, the tomato and the grape. Here the whole flesh is equally soft throughout. The orange is merely a berry with a leathery rind. The *pepo*, or *gourd-fruit*, is the sort of berry which belongs to the gourd family, mostly with a hard rind, and the inner portion softer. The pumpkin, squash, cucumber, and melon are the principal examples. The *pome* is a name applied to the apple, pear, and quince, — fleshy fruits like a berry; but the principal thickness is calyx, only the papery pods arranged like a star in the core really belonging to the pistil itself.

Of fruits which are partly fleshy and partly hard, one of the most familiar kinds is the *drupe*, or *stone-fruit*, of which the cherry, plum, and peach are familiar examples. In this the outer part of the thickness of the pericarp becomes fleshy, or softens, while the inner hardens like a nut. From the way in which the pistil is constructed, it is evident that the fleshy part here answers to the lower, and the stone to the upper side of the leaf; a leaf always consisting of two layers of green pulp, an upper and an under layer, which are considerably different.

In *dry fruits*, the seed-vessel remains herbaceous in texture, or becomes thin and membranous, or else it hardens throughout. The *achenium*, or *akene*, is a small, one-seeded, dry, indehiscent fruit, such as is popularly taken for a naked seed, but is plainly a ripened ovary, and shows the remains of its style or stigma, or the place from which it has fallen. Of this sort are the fruits of the strawberry; that is, the real fruits, botanically speaking, which are taken for seeds, not the large, juicy receptacle on the surface of which they rest. Here the akenes are simple pistils, very numerous in the same flower, and forming a head of such fruits. In the raspberry and blackberry, each grain is a similar pistil, like that of the strawberry in the flower, but ripening into a miniature stone-fruit, or drupe: so that, in the strawberry, we eat the receptacle or end of the flower-stalk; in the raspberry, a cluster of stone-fruits, like cherries on a very small scale; and in the blackberry, both a juicy receptacle and a cluster of stone-fruits covering it.

A *nut* is a dry and indehiscent fruit; commonly one-celled and one-seeded, with a hard crustaceous or bony wall; such as the chestnut, cocoanut, hazelnut, and the acorn. In the latter, the involucre in the form of a cup, at the base, is called the *cupule*. In the chestnut, it forms the burr; in the hazel, a leafy husk. —*Gray's School and Field Book of Botany.*

Mr. Tilton : *Dear Sir*, — Having a liking for the "curious and rare" as well as for the "common beautiful," I was tempted last March, after reading an article in one of my volumes of the Journal on the treatment of *Musa Cavendishii*, or Dwarf Banana, to invest in one, and try my luck with it, although utterly without that prime necessity in growing "things tropical," a stove, or its next-door neighbor, a greenhouse. I acted upon my resolve directly, and the next day was the possessor of the most infinitesimal specimen of tropical verdure I had ever seen. I immediately repotted the little *treasure* in a very rich compost, using old cow-manure in considerable quantity. To my delight, new leaves commenced forming ; one followed another in quick succession, the stem growing proportionately larger with each leaf. Discovering the roots growing through the bottom of the pot one day, when admiring my *special pet*, I again gave it a shift ; this time into a tub twenty-five inches in diameter by twenty inches in depth, using guano as a stimulator, mixing it with the soil, besides using it in solution once a week. The plant seemed to have received quite a check from the shift, as it grew little or none till the roots reached the sides of the tub ; *then* it started, forming leaves of large size with wonderful rapidity, many being perfected in five days : and at this time my dubious little specimen of March is nearly three feet high, with an unexpanded leaf in the centre, which, when full grown, will carry its height *above* three feet. From the time of its receipt, I have kept it in a glass enclosure, facing the east and south ; the sash having doors on one side, which have been open since June, allowing the air free circulation. I have shaded it by muslin curtains, and, even now, the thermometer reaches the high figure of 120° Fahr. This high temperature, no doubt, has influenced in a measure this rapid growth. My success with this plant has been and is very gratifying. Each new leaf with its beaded edge, its delicate bloom, and satin smoothness, has given me pleasure untold ; and, having enjoyed it for so long a time, I am loath to give it up : but I am like the man with the elephant, "I don't know what to do with it." If it continues to grow at its present rate, the ceilings will have to be raised to accommodate it. If I *can* give it room, do you think it may be wintered successfully in the *house ?* And is this family so easily grown, so tough, and willing to adapt itself to circumstances ? or am I one of the fortunate few recognized by Flora as her lover and votary, receiving this favor from her hands as a special reward for my attachment ?

Troy, N.Y., July 23, 1869. *Robt. Waggoner.*

[*Musa Cavendishii* may be wintered in the house ; the only care necessary will be to water sparingly when kept at the temperature of an ordinary sitting-room. If kept too wet, at a low temperature, there will be danger of its rotting. — *Ed.*]

The Currant Worm. — A piece of plate, valued at twenty-five dollars, is offered by the Worcester County (Mass.) Horticultural Society, for a safe, certain, and economical method, better than any now known, of destroying the currant-worm, or preventing its ravages.

English Apples. — The favorite apples of England do not generally succeed in this country; but as some of them, like the Ribston Pippin, are highly prized as far north as Bangor, Me., and in Canada and Nova Scotia, we mention a few others not generally known, which have proved best here, and are worthy of trial farther north.

The *Blenheim Pippin* is a large and very handsome kind, of strong growth, but only a moderate bearer. Late autumn.

The *Golden Noble* is truly noble in appearance, of large size, flattened conical-shape; skin of a beautiful clear yellow like the Early Harvest; tree vigorous, with smooth gray bark. Excellent for cooking. September.

Dumelow's Seedling or *Wellington.* — Large, pale yellow; keeps until spring, and retains its acid remarkably until that time.

Hawthornden. — This is of Scotch origin. A very abundant bearer, even when the trees are quite small. Handsome, and of good quality.

Beauty of Kent. — Large and handsome; pale yellow, striped with red. October and November.

Devonshire Quarrenden. — Medium size, flattened, dark crimson, pleasant flavor. August.

Rymer. — Large, conical, yellow streaked, and nearly covered with dark red. Productive and vigorous. November and December.

King of the Pippins. — Resembles the Ribston Pippin, and, like that, is disposed to drop in too warm a climate, but will probably succeed wherever that variety does. Medium size, yellow striped with red, and slightly russeted; flesh firm, of good quality. October and November.

Sam Young. — Of Irish origin. Small, russet; flesh firm, rich, and high flavored; tree a small grower, better adapted for the garden than the orchard. Winter.

Brabant Belle-fleur. — Tree vigorous, spreading; fruit large, yellow, much striped with red. Late autumn. More eligible for cooking than table.

Cambuthnethan. — Of Scotch origin. Medium size, yellow striped with purplish red; a slender grower; fruit rich and good. Late autumn and winter.

Sykehouse Russet. — Medium size, flattened; flesh very close-grained and firm, of good quality; tree of upright, vigorous growth. Keeps till spring.

Lucombe's Seedling. — Large and handsome, yellow striped with crimson. Good grower and bearer. Of good quality. Autumn.

Irish Peach. — Medium size, flattened, pale greenish yellow striped with dull red; flesh tender, juicy, and good; tree a moderate grower. August.

Longville's Kernel. — Medium size, flattened, conical, ribbed; skin pale yellow, somewhat striped with red, juicy, and of pleasant flavor. September.

Scarlet Nonpareil. — Medium size, roundish, flattened, greenish yellow, with a red cheek, speckled with star-shaped yellow dots. Of good quality. Keeps through winter. Tree of moderate, upright growth.

In selecting varieties of trees for planting an orchard, when you hesitate between two, choose the more vigorous grower, as, if the fruit does not succeed, it will be more eligible for re-grafting.

It would seem almost impossible to plough the ground too deeply when preparing it for planting trees or vines, or too shallow when they are once planted. Where the ground has been deeply ploughed or spaded among trees, few roots will be found within six inches of the surface. Therefore use only a fork or cultivator among trees, and invite the roots to the surface, where they will have the benefit of warmth and air. But keep the surface finely pulverized so as to absorb moisture from the air.

The Kirtland and Hadley Pears. — As long ago as 1845, we fruited the Hadley Pear, which took its name from the town of Hadley, Mass., where it was supposed to have originated. In 1862, the Kirtland produced fruit for the first time with us, which proved identical with the variety so long known as the Hadley. We were greatly at a loss to explain this circumstance, as the minute history given of the Kirtland by the venerable pomologist, Dr. J. P. Kirtland, who had seen with his own eyes the development of this variety from the very embryo, and had cultivated, cherished, and introduced it to public notice, seemed difficult to reconcile with the existence of the Hadley at that place where we hear from it in 1835. A note just received from Dr. Kirtland explains the mystery. It appears that some time between 1823 and 1830, a Mr. Hunt of Northampton, Mass., spent several days with Dr. Kirtland, who then resided at Poland, O., at about the period when the Kirtland Pear first began to attract notice. He was an intelligent amateur pomologist, and was ardently engaged in searching for new and valuable fruits in the numerous seedling orchards then fruiting in that new country. There can be no doubt that the grafts of the Kirtland were carried by him to Northampton, and that from them sprang the supposed seedling tree in the adjoining town of Hadley. The Hadley must therefore be set down as a synonyme of the Kirtland. *R. M.*

One indication of the progress of horticulture in this country is that we hear so little about training trees on walls or fences; while, formerly, a considerable part of every work on fruit-culture was devoted to this subject. Following the example of our English cousins, from whom we learned our horticulture, much attention was formerly given to their elaborate systems of training; but they are now found to be useless or worse, under our hot suns, unless it may be for a few varieties of pears, for which the season of the Northern States is hardly long enough; and for these it is hardly worth while, as we have other equally good varieties which can be grown to perfection with much less trouble. We have seen the fruit of trees trained on a brick wall presenting a burnt appearance, which showed plainly that the heat was too great. Such trees have been well described as "stretched perfectly flat as if impaled alive, or crucified with a cruel and unattainable purpose of compelling them to produce rich fruit by torture."

The question of applying iron to pear-trees, as recommended some years ago, is again agitated. We have used a cart-load, spreading half a bushel round a single tree, and digging in, without doing any good or harm that we could perceive.

Market Pears. — The Windsor or Summer Bell. — Specimens of this old variety made their appearance in Boston market before the end of June. They were brought from Norfolk, and were unripe and not even fully grown; and, though they would doubtless mellow, it is equally certain that they would be of poorer quality than if allowed to attain full size, though this variety is always so inferior, that it is impossible they could be much poorer. This pear at best consists of cellular tissue with a little sugar and alum and water. The flesh is white, soft, and coarse-grained, and rots at the core. If left to ripen on the tree, it is sure to grow mealy. Probably there is not another pear half so poor as this which is so generally cultivated. Now, why is this? Simply because people can make money by growing it. In the first place, the tree is one of the most vigorous and healthy, with strong, upright wood, and ample, dark-green foliage. We have known large trees of this kind grafted with weaker-growing varieties, which have gradually died away, and, years after, the original stock has re-appeared in all its pristine vigor. Probably a nursery-man could afford to sell a larger tree of this kind for the same money than of any other variety; yet we do not see how any nursery-man who was the least of a pomologist could sell a tree at all without a feeling as if he were half imposing on his customer. When planted in the orchard, the tree continues to grow vigorously, soon comes into bearing, and gives enormous crops of large, fair, yellow pears of worthless quality, but whose size and earliness attract purchasers.

There are many fruits, which, though not of the finest quality, are yet so near it, and withal so large, hardy, and productive, that they are recommended by the best pomologists for general cultivation, especially for orchards. Now, we consider this perfectly legitimate within certain limits; but as remarked by Mr. Wilder, in his address at St. Louis, "so long as we raise fruit to eat, the first point in estimating the value of a fruit must be its quality for eating; and no combination of other qualities, however desirable, can atone for any considerable deficiency in this respect." Now, it is evident, that, with the yearly increase of fruits which combine the highest quality with all other valuable points, the deficiency of flavor which we may allow to be balanced by other excellences must lessen; but as for the Windsor Pear, it never was good enough, with all its size and hardiness and productiveness, to be recommended, and we confess to a feeling of shame and disgust at our fellow-men when we see them buying and eating such trash.

But the question, How is this state of things to be remedied? is much more easily asked than answered. Just so long as there is a demand for such fruit, there will certainly be a supply. Then how is the demand to be lessened? It must be a work of time; but let every horticultural journal, and every horticultural society, and every individual horticulturist, constantly make known that such fruit *is* trash, and that there is better fruit, if not greater. This will do something; but let this stuff be superseded in the market by equally large and handsome fruit of the highest quality, and buyers will soon find it out, and then orchardists may graft over their Windsor trees. Perhaps we shall be told that there is no first-rate pear as large and early as the Windsor; but then there is a fortune in store for the man who raises one. Ten years ago, there was no

pear earlier than the Bartlett, and as large and good; now we have the Clapp's Favorite, of the first size and quality, and from one to two weeks earlier. There is no reason why this should not be hybridized with a still earlier variety, and another be produced combining the size, beauty, and quality of one with the earliness of the other. Or, perhaps, this very Windsor Pear may be crossed with a fine-flavored fruit so as to ingraft upon its size and vigor the only quality in which it is deficient.

The Windsor Pear is recommended by the American Pomological Society for cooking, for which it is well adapted. In Europe, it does not grow as large as here, but has sometimes a red cheek, and is altogether of better quality.

To the Editor of the "Journal of Horticulture."

I dissent entirely from the method of cutting asparagus recommended in the June number of the Journal, and ascribed to Charles McIntosh; especially if to be used as cut.

It is true most market-gardeners cut it as recommended, and the hotels and restaurants thus cook and serve it; but it comes to the table with about two or three inches of green top that is eatable, and three or four inches of white, root-like stem, that grew beneath the surface, and which looks very white and delicate, but which is as unfit for food as the fibre of a white-oak tree.

That part of an asparagus-sprout which grows beneath the surface of the ground is never eatable; yet probably one-half of the weight of asparagus sold is of this worthless character.

Asparagus-sprouts should be from eight to ten, or even twelve inches high when gathered, and should never be *cut*, but should be *broken* as near the ground as they will break easily; then all that is gathered will be tender and eatable. Sprouts from eighteen inches to two feet high are quite good. They are best broken by placing the finger on one side near the ground, and the thumb on the opposite side, bending the sprout to an angle of forty-five degrees from the perpendicular; then with a tight pressure slip the thumb and finger upwards till the sprout breaks, and all above the break will be fit for the table.

Asparagus, properly gathered and served, is one of the most delicious products of our gardens; and it is very singular that a custom should have so long prevailed of using the tough, woody fibres of the root, instead of the delicate, green, and succulent top. *Elmer Baldwin.*

Farm Ridge, Ill., July 12.

[We shall give the details of our own method of cutting asparagus in a future number. — *Ed.*]

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

NEW CROTONS. — Most cultivators of stove-plants appreciate the merits of the several variegated crotons known in gardens as *C. variegatum*, *C. pictum*.

CROTON MAXIMUM.

and *C. lineare*, as the fine specimens produced, and their frequent appearance at exhibitions, sufficiently testify. These, however, are quite superseded by some of the many noble varieties of this variable species (more correctly

called *Codiæum variegatum*) which were obtained for our gardens by Mr. John Gould Veitch during his trip to the South-sea Islands, and of two of which we are enabled, through the courtesy of Messrs. Veitch & Sons, to offer illustrations.

One of the finest of these novelties is *Croton maximum*, of which we append a diminished figure. This is one of the largest of the yellow series, producing

CROTON AUCUBÆFOLIUM.

leaves from twelve inches to fourteen inches in length, and three inches to four inches in breadth, of an oblong-lanceolate figure, acute at the apex, of a rich golden-yellow color, marked on each side of the midrib with dark green transverse bars of irregular form. The plant is of strong, robust habit, and admirably suited either for general decoration, or for the purpose of exhibition; so that we may expect soon to see it taking a prominent position in our public displays of ornamental plants.

Fully equal if not superior to this in beauty is *Croton Veitchii*, which has leaves nearly a foot long, and about two inches broad, oblong-lanceolate, acute, polished, having the midrib, the main veins, and the reticulations near the edge, of a clear creamy yellow, which becomes suffused with deep rosy red, the intervening transverse bars being of a deep green. The coloring of these leaves is very beautiful; and the vigorous habit of the plant, as well as the manner in which it displays its foliage, are such as to place it in the front rank of ornamental-leaved stove-plants.

We add a figure of another variety, which, though less strikingly beautiful than the foregoing, is remarkably different from any of these, or indeed from any other forms of the species. This is *Croton aucubæfolium*, — a plant which is of compact habit, and has oblong-acuminate leaves, six inches or seven inches long, and two inches to three inches wide, dark glossy green, studded with blotches of yellow, sometimes passing into red: hence it bears a strong resemblance, in its markings at least, to the well-known *Aucuba japonica*.

Of a somewhat different style of marking, but not less beautiful, is *Croton Hookeri*, introduced from Erromango. It has oblong-lanceolate leaves, somewhat smaller in the examples which have been exhibited than those of the two former, but marked with a broad vandyked centre of very bright clear yellow, the outer margin being green. The strong contrast of color, and the regularity of the marking, make this a very ornamental plant.

Another distinct form of a strikingly ornamental character is *Croton Wisemannianum*. This has elongated leaves of a narrowly-lanceolate form, with a yellow variegation; the markings resembling those which occur in the leaves of the commonly-grown *C. variegatum* itself.

These plants have all been certificated at one or the other of the meetings or exhibitions of the metropolis; and may be safely recommended to the attention of plant-growers as very far in advance of the ordinary crotons, on which so much cultural skill is now often expended. — *M., in Florist and Pomologist.*

Celery: Weight of Plants. — We notice from a report of the Newark (Eng.) Celery Society, that the samples receiving prizes weighed as follows: For Red Celery, first prize. six pounds and ten ounces; second prize, six pounds and six ounces. For White Celery, first prize, four pounds and eleven ounces; second prize, four pounds and seven ounces.

It was remarked, that the specimens were not so fine as usual, in consequence of the long-continued drought. It was also stated, that plants were exhibited weighing much more than any which took prizes; but the awards were made on the ground of quality.

Mr. Cole, who introduced the variety known as "Cole's Superb Red," expressed his belief, that this celery could be grown to the weight of *twelve pounds*, were it desirable to have it so large.

In Great Britain, thirty million pounds sterling have been expended for drainage alone, since 1845.

The addition of sulphuric acid to bone to increase its fertilizing properties was first suggested by Liebig in 1840.

Dwarf Apple-Stocks. — At the meeting of the London Horticultural Society, Jan. 19, Dr. Hogg exhibited, on the part of Messrs. Rivers, a series of apple and other stocks, and made some comments on them. The stocks sent were as follows : —

" Group No. 1. — Apples on the Nonsuch English Paradise stock, with two stocks one year old. The trees were one and two years old, with the exception of the dwarf bushes, which were two and three years old : this stock was raised at Sawbridgeworth from the Nonsuch Apple, some thirty odd years ago. The specimens sent showed the great property of the stocks to produce surface-roots, and of the scions grafted on them to produce bloom-buds, while their vigorous growth was checked.

" Group No. 2. — Apples on the broad-leaved English Paradise stock, with two stocks one year old : the trees were one and two years old. This stock was raised from seed in the same season as the former ; its parentage is, however, unknown. Both these stocks are remarkable for their rooting freely at the surface, and giving a robust growth, with great fertility.

" Group No. 3. — Apples on the French Doucin stock, one and two years old : the best variety received from France. This kind does not root so freely near the surface in this climate as the English Paradise stocks. Two stocks, one year old, were sent with the trees. This stock is different from the French Paradise.

" Group No. 4. — Apples on the French Paradise stock, one and two years old, with two stocks one year old. The trees on this stock are very fertile, but are apt to canker in the stiff, cold loams of Sawbridgeworth. These had been recently imported."

As to this stock, which is apparently quite different from that sent by other exhibiters as the true Pommier de Paradis, Dr. Hogg remarked, that it was of very dwarf habit, and never threw out strong woody roots. It differs from the English Paradise, which latter is much stronger growing, and not nearly so dwarf as the French Paradise.

" Two Peach-Trees. — Bellegarde and Grosse Mignonne Early ; budded on a kind of White Magnum Bonum Plum. The ' French peaches ' were formerly budded on the White Pear Plum and the Brompton Plum stocks : in France, at the present day, they are budded on the Black Damask and the Mirabelle Plum stocks, with no great success, as the stocks do not swell freely. The stock now sent swells with the scion, and seems likely to supersede all other kinds of plum stocks for the French peaches."

With reference to these, Dr. Hogg stated, that the kinds formerly used as stocks for peaches were the Mussel Plum, the Pear Plum, and the common plum ; but it was found that the French peaches, such as the Téton de Venus, and others, would not unite satisfactorily with these stocks. Mr. Rivers, however, had discovered in Worcestershire a kind of plum, which he calls the Pershore Plum, which is closely allied to the White Magnum, and which is suitable for all peaches and nectarines. Messrs. Rivers also exhibited the following stocks : —

" One Burr Knot, a surface-rooting apple, forming a very good stock for gar-

den apple-trees ; two pygmy Paradise stocks, one year old ; two miniature Paradise stocks one year old. These were sent to show the tendency of our old kinds of apples to produce from seed surface-rooting dwarf trees ; they have not yet been employed as stocks to graft apples on, owing to their feeble growth : they were raised at Sawbridgeworth from seed some years since. One lateral single cordon apple-tree on the English Paradise stock, five years old ; one vertical cordon apple-tree, on the same kind of stock, and of the same age ; one lateral single cordon apple-tree on the French Paradise stock, five years old — an imported tree from France : the three last-mentioned trees had been growing side by side in a stiff, cold, clayey soil."

Dr. Masters exhibited, on behalf of Mr. Scott of Merriott, specimens of crab-stocks of English Paradise, received as such from the Woking growers, and which had been injured by frost in 1867 ; and specimens of the Pommier de Paradis of the French, growing in the same soil and of the same age as the English Paradise. This is apparently quite different from the Pommier de Paradis sent by Mr. Rivers. It was considered by the committee as likely to canker, while the knobs or burrs so freely produced on its stem, and from which roots proceed in abundance, were considered to be objectionable, as likely to harbor American blight and similar pests. It is a vigorous stock, quite hardy, and producing an abundance of somewhat horizontal surface fibrous roots. Dr. Masters also showed, on behalf of Mr. J. F. Meston of Addlestone, specimens of the French Paradise stock (apparently similar to that shown by Mr. Scott), and of the Doucin stock, together with cordons of Reinette Francha, Calville Blanc, Belle de Bois, and Canada Gris, worked on the French Paradise, and of Reinette du Canada on the Doucin stock. The plants were imported from France, and those on the Paradise were little more than a year from the graft. The exhibition of these stocks, &c., created great interest, and it was resolved that the exhibiters be requested to allow the specimens to be sent to Chiswick, in order that they may be tested. We shall take another opportunity of alluding to them.

Mr. Berkeley, Feb. 16, read a report from Mr. Barron, the superintendent of the Chiswick Garden, containing an account of the various apple-stocks previously exhibited to the committee, and a comparison of them with others growing in the society's garden. Mr. Barron's able report will be published in full in the Society's Journal at an early date, in pursuance of the new arrangements for accelerating the publication of that periodical. We are, however, enabled, by the courtesy of the secretary to the committee, to give its substance as follows : —

" In an old list of the orchard-trees in the society's garden, Chiswick, in Dr. Lindley's handwriting, dated 1822, the stocks on which the various apples are worked are stated ; viz., the Crab, the Doucin, the English Paradise, and the French Paradise. Many of the identical examples given still exist in the garden, and all have formed large orchard-trees. Those on the Crab and Doucin have made considerably larger heads and trunks than those grafted on the English and French Paradise, which are as nearly as possible equal. Some of the trunks on the latter are, however, fully six inches in diameter. All of them

are about of equal fertility; but, in the case of those on the French Paradise, there is apparently a greater tendency to canker than on either of the others.

"The suckers of the French Paradise appear to me identical with those exhibited by Mr. Rivers and Mr. Meston, which are decidedly the same as each other. I have compared each example with specimens of the Pommier de Paradis, as received from André Leroy of Angers, which we have been using in the gardens for the last eight or ten years, and am prepared to state that they are all identical. The French Paradise, when it grows at all vigorous, is easily recognized by its reddish-brown bark, and the peculiar bulging at the base of the buds on the stem. In weak examples, this is not so apparent.

"The Pommier de Paradis of Mr. Scott of Crewkerne, appears distinct from all the others; the shoots being of a lightish brown color, and downy. The climate of Somersetshire may have, however, altered them considerably.

"A tree — the identical tree noticed in the Horticultural Society's Transactions (as I am informed by Mr. Thompson) — of the dwarf apple of Armenia, which was sent home to the society by the late Mr. Barker, who was for many years British Consul in the East, and to whom also we are indebted for the Stanwick Nectarine, and many other fruits, still exists in the garden. It is in a very healthy state, and will this season produce blossoms, if not fruits. It is growing in very poor soil, and, until last spring, was much neglected and smothered up with other trees, so that it has not had so fair a chance of developing itself as it should have had. The stem is almost the thickness of one's arm, and the top about ten or twelve feet high, and as much in diameter. Mr. Thompson always considered it identical with the French Paradise; and no man has had a better opportunity of examining them, and arriving at a conclusion. It appears to me slightly different from the French Paradise of Leroy, and more nearly resembles that of Mr. Scott. They have been grown under very dissimilar conditions, however: so that that point cannot be settled.

"None of the stocks used in the society's garden have ever suffered and been injured by frost in the manner of those of the English Paradise exhibited by Mr. Scott, which were very much cankered. And the French Paradise seems to succeed best in wet, clayey soils. I have never seen the slightest tendency to canker, excepting with the trees now nearly fifty years of age.

"The pygmy and miniature Paradise stocks of Mr. Rivers cannot be distinguished from weak examples of the true French Paradise.

"The grafted examples exhibited by Mr. Rivers on the Nonsuch English Paradise, and the Broad-leaved English Paradise, are excellent, about similar in vigor to those on the French Paradise exhibited by Mr. Meston, and also in their rooting properties. Those on the French Doucin in both lots are stronger, and not so fibry rooted as the three former. Mr. Rivers's examples on the French Paradise are weak, and wanting in vigor.

"All of the examples exhibited supported the statements made by the parties interested. It is, however, an easy matter with such things as apple-stocks, in which there is so much variation in respect to health, vigor, &c., and even of the different growths of the apples worked upon them, to select examples to uphold any opinion that may be advanced respecting them. A true knowledge of

their respective merits can only be obtained by direct comparison; and, now that all these may be seen growing side by side in the society's garden, any one may examine them for himself, and draw his own conclusions."

On Grafting during Winter. — An article contained in the number for August, 1859, of the "Journal of the Société Impériale et Centrale d'Horticulture" (Paris), entitled "Note upon Winter Grafting," has reminded us of a proceeding already indicated, and practised by Landais in the sixteenth century, but which still remains without application, along with many other excellent inventions and happy improvements. Now, to advise grafting in December and January, when the sap is inert, and in an absolute state of repose, appears at first sight to be a paradox, in fact, perfect nonsense. However, the practice given here is a complete contradiction to the theory, as is proved by several perfectly successful experiments, many of which, thoroughly conclusive in their character, are mentioned in the article in question, by M. Laure of Toulon, a member of the society. It is the kind known as cleft-grafting, which has been the subject of experiment; and we here give some of the numerous examples mentioned in support of the practice.

In December, 1836, M. Flory grafted five wild stocks in clefts, and, after the operation, they certainly presented any thing but a promising appearance. In the January following, there happened to be some very severe frost; however, in March, the buds of these five grafts commenced to swell, and became developed; while those of other grafts which had been operated upon in the usual season had scarcely shown any signs of vitality. They were completely successful, not one failure occurring out of the five operated upon. The following year, the same gardener performed a similar operation, at the same season, up n nearly a hundred subjects; and this experiment was also attended with complete success.

The author of the communication declares that he has himself practised cleft-grafting during the winter for more than twenty years, and has invariably seen his operations followed by success so undoubted as to satisfy any one that this is a most valuable and useful discovery. In answer to the objection, that, in the North, grafting during the winter would not be successful, he affirms that Flory and he have operated out of doors in seven and eight degrees of frost; that in December, 1857, M. Flory, after an extremely severe frost, grafted twenty-five black cherries, and did not plant them until after the operation; and that, with the exception of one only, the experiment was perfectly successful.

It appeared to us that it would be very useful to reproduce a short summary of this excellent note, in order that by so doing we might call the attention of the numerous cultivators of fruit-trees to this interesting subject. Should the practice be found worthy of general adoption, it will render them immense service, by enabling them to perform their operations during the *dead season*, when time hangs heavily on their hands, and leaving them at liberty to employ in some other manner the time usually devoted to grafting in the ordinary season. — *Verschaffelt's Illustration Horticole.*

Select Ferns. — *Adiantum Farleyense.* — This superb maiden-hair ranks amongst the noblest introductions of modern times : it is at once the rarest and the richest of all the *adiantums*, and must for many years to come be valuable ; for it can only be increased by division, and the few who possess plants rather prefer to keep them intact as specimens than to tear them up for multiplication. So many beautiful plants claim our attention as "novelties," that we cannot take interest in all alike, and only a few amongst them all ever acquire any thing like historical fame. This distinction, however, has fallen to *Adiantum Farleyense;* and it is not at all surprising that every one who has had a share in introducing it to the notice of English cultivators should be jealous of any diminution of the credit due to them. The name reminds us of Farley Hill, in the Island of Bar-

ADIANTUM FARLEYENSE.

badoes, the residence of T. G. Briggs. Esq., where it was first found. It is a question of some interest, What is *Adiantum Farleyense?* The probabilities are all in favor of its being a form of *A. tenerum*, and it is generally accepted as such ; and a very remarkable form it is, truly. There is another question : Does it ever produce spores ? Mr. Robert Veitch raised a batch of seedlings from supposed spores ; and the result was, not true Farleyense plants, but the quite new and beautiful fern named *Adiantum scutum* (Hibberd), syn. *A. Ghiesbreghtii.* It is alleged by cultivators who possess large specimens of Farleyense, that it never produces a fertile pinnule ; yet, if it does not, whence came *A. scutum,* which is as much like a form of *tenerum* as *Farleyense* itself ? Our own opinion is, that it does produce true spores occasionally ; and that, as it

is itself, in all probability, a hybrid, so its offspring will deviate from itself, and, while retaining a certain trace of the *tenerum* type, will probably give us new editions and variations of the three forms by which the type is represented; namely, *tenerum*, *Farleyense*, and *scutum*.

To grow this grand fern, stove-heat is essential. It will live in a warm greenhouse; and is a good fern for a case, kept in a warm room. But, to bring out its magnificent properties, a damp, shady part of the stove is required. Like others of its family, it is never benefited by being wetted overhead; and it loves a still air and a steady temperature.

Adiantum concinnum excisum multifidum. — This is a true sport from *concinnum*, and one of the most elegant of all the *adiantums*. Its principal characteristic is its duplicated pinnules, which are freely notched on the margin, and

ADIANTUM EXCISUM MULTIFIDUM.

so abundantly produced, that they overlap, and present a rich, tasselled appearance. We met with it at Mr. B. S. Williams's nursery, Holloway, where it originated as a "chance seedling." Charming for warm greenhouse or stove, but of no use for the cold-fernery.

Lastrea patens. — This lovely fern has endured five winters, without aid of artificial heat, in Mrs. Hibberd's cool-fernery; and we now consider it one of the most select of the select varieties. It is classed under *Nephrodium* in Hooker's "Synopsis Filicum," in which work the generic name "Lastrea" is entirely suppressed. The alliances are *N. pilosulum* and *N. albicaule;* and *Asplenium Brackenridgii* comes very near it. The cultivator will rejoice over this fern because of its ample spreading, herbaceous, soft-textured, emerald-green fronds,

of a rich leafy character, and its comparative hardiness, as it will bear a few degrees of frost with impunity. *Nephrodium molle* is frequently grown under this name. It is truthfully figured in Lowe's "Ferns" (vol. vii. plate 3) as *Aspidium patens;* but, as is common enough, the truthful picture falls far short of the beauty of the plant.

Polystichum setosum, syn. *Nephrodium setosum.* — There are more things in heaven and earth than are dreamt of in our philosophy: so I make no quarrel with Mr. Baker for placing this under *Nephrodium* in Hooker's "Synopsis." (By the way, every lover of ferns should buy Hooker's "Synopsis Filicum," published by Hardwicke, Piccadilly, price ——: I don't know, — not under a guinea certainly.) It is a very polystichum-like fern, with large dark-green, glossy, elongated, deltoid fronds; the stipes of each is much beset with brown scales; the two lower pinnæ divergent from and larger than the rest; and the pinnules rather halberd-shaped than lanceolate, as they are described in Hooker's "Synopsis." A splendid fern, adapted for cool-ferneries, always fresh, glossy, and gay, and taking no harm if subjected to a few degrees of frost.

Litobrochia incisa. — A splendid greenhouse fern, with long-arching fronds; the stipes reddish-purple; the pinnæ, which are distinctly and distantly divided, brilliant light green. This is very distinct and beautiful, but must have room to display its beauties, as the fronds average three feet in length. In Mrs. Hibberd's cool-fernery, it has borne the brunt of five winters without aid of artificial heat.

Pteris sinensis. — This is a choice and desirable fern for the amateur who already possesses a collection, but is scarcely useful to the beginner or the "limited liability" cultivator. It is the *Pteris crenata* of Hooker's "Synopsis Filicum," and of Lowe's "Ferns" (vol. iii. plate 40). It is a good companion to *Pteris serrulata*, and, like it, very much inclined to become a weed of the warm fernery. Warm greenhouse temperature will keep it all winter. — *S. H., in Floral World.*

ALTERNATHERA AMŒNA PROPAGATION. — It is readily increased by cuttings, which may be put in now in sandy soil, with an inch of sand at the top of the pots or pans. The cuttings should be inserted about an inch apart. Select those with three joints and the growing point, and insert them two-thirds of their length in the soil. A gentle heat is necessary, or a hot-bed of from 70° to 75°. You may take up some of the old plants, and winter them in a house having a temperature of 45°; and these will afford you plenty of cuttings in spring, which will answer for bedding out the same season, if growth is encouraged, and they are hardened off well before planting out.

A BASKET of twelve magnificent pears is exhibited in Covent-Garden market. The price is eighteen guineas. — *Wilts Mirror.*

How to grow Prize Celery. — We make the following extract from an article contributed to "The Gardener's Magazine" by an amateur exhibiter who had been successful in obtaining the first prize for celery for many years: —

"It is well known, that, in its natural habits, celery delights in a moist, shady spot; and it even thrives well where its roots are constantly moistened by a running stream overhung with brushwood. From this it might be inferred that the plant was averse to the sun's influence; but it is not so when under cultivation, as probably every one knows. Still the principle must not be ignored, as I have proved in practice, that celery will grow much better if I shade it, if, at the same time, I withhold water; while, if I give neither shading nor water, it will not grow at all in hot, sunny weather. The secret, then, of growing celery, is to keep it bountifully supplied with water, and it will grow, whether in sun or shade.

"*Turner's Incomparable Dwarf White* I choose above all others; and my preference for this variety was brought about as follows: For two successive seasons I obtained the first prize with Laing's Mammoth, which I used to grow to a prodigious size, and, to all appearance, very handsome. So I grew it the third year, better even, according to my own notion, than before. But, this year, our society changed its judges; and one amongst them, I suppose more knowing than the rest, when they came to judge the celery, actually took out his knife, and divided each stick exhibited from end to end! You may judge my surprise, when I went round after the exhibition was open, to see the first prize given to a poor-looking, puny lot of Turner's Dwarf White. I sighed over what I then thought an unnecessary mutilation of my fine sample; and for a time, of course, I considered the judges a most incompetent lot. But, on reflection, I was bound to acknowledge the justice of the award. My own sample, for length and weight, would have more than equalled three such lots as that which had gained the first honors. But, then, mine had only long, coarse, outside sticks, with not a tenth part fit to send to table; while the Dwarf White was a solid mass of white in the centre of each stick, half of which was quite eatable. This consideration very properly influenced the decision of the judges; and there ended my connection with large-growing celery for exhibition.

"After my plants have been set a week, I commence what I call my summer treatment; that is, to surround them with a soil made to the consistency of a thick paste by frequent doses of strong manure-water. I keep the soil in this state by giving more water every time I find the surface getting a little dry. In fine, drying weather, I water every morning; in dull, damp weather, every other day. But, once for all, let me say, at whatever stage the plants are in after they are taken from the greenhouse, I never go to bed without damping the leaves from the rose of a fine water-pot. I do this even when they are in the trenches. If I give the roots a good soaking, I never consider my work done of an evening until the tops have had their usual sprinkle; for I believe the leaves of celery absorb a deal of moisture during the night. Clear water is better than none: but manure-water is always to be used if it can be got; and, with plenty of that, you need not fear even a tropical sun.

"My trenches are prepared in the usual way, with about four inches of rotten

manure mixed up with the soil. I tie up each plant loosely from time to time as it advances in growth, to save its blowing about; but I put no earth to it until I have got the height of growth required. Many people like the bit-by bit system of earthing celery: but never was a greater mistake committed, especially during the summer months; for it must have water during that time, if you expect it to grow; and how can it get it if the trench is filled with soil? I grow on as fast as possible; and, just six weeks before the show, I put up the whole bulk of earth at once, which bleaches it very nicely by the time I want it. Such is my system of growing prize celery, which has never failed since I learnt what constitutes an article fit for table."

Annuals with White Flowers for Clumping. — One of the very best is the white variety of the common candytuft, or *Iberis umbellata:* while it lasts, there is no white flower in the garden to equal it. The white Virginian stock, or *Malcomia maritima*, may be sown on any day throughout the year, except when the ground is frozen: therefore the "rough-and-ready" gardener should have always at hand a pinch of seed to fill up any gap that occurs when nothing better can be found for it. The pure white variety is the only one I shall recommend; but all the sorts are useful. The white Lobel's catchfly is good. *Clarkia pulchella alba* will do for clumps; but it is rather weak and washy. *Collinsia bicolor* is a well-known annual: the white variety of it well deserves a place in this selection. *Silene pendula alba* is extremely neat and pretty, growing only six inches high. *Campanula speculum*, or Venus's looking-glass: the white variety of this is as pretty as the blue. — *Floral World.*

Rapid Culture of Cyclamen persicum. — To raise a stock of full-sized bulbs in six months is very easy for those who have convenience to do it. Prepare a number of shallow boxes, three inches deep, with a few drainage-holes if the boxes are new; no drainage-holes if old and slightly-cracked boxes are used. Seed-pans will do; but they are heavy to lift about, and, being round, take up more room than boxes. A convenient size for the boxes is sixteen inches square. They can be packed close together, and an immense number of plants can be accommodated in a small space. Over the drainage-holes place hollow crocks: lay down half an inch of peat lumps, tough and fibry. Fill up to the brim with a mixture of sand, leaf-mould, and fibry peat, or very turfy yellow loam, equal parts. In January, sow the seeds singly, three inches apart every way. Place the boxes on a tank or bark bed, in a moist temperature of sixty degrees. As soon as the seedlings show, look over the boxes, and, wherever a seed has missed, insert another. Keep them growing steadily till March; then increase the heat to seventy degrees, with plenty of atmospheric moisture and regular waterings. By the end of May they will have formed large, sound, thrifty bulbs. Remove them from the bed, and place them under the stages of the house, or, if there is room to spare, on a table in the greenhouse; whence, after a fortnight, they may be removed to a frame or pit. Dry them off gradually, and ripen; and, in six months from the date of sowing, they will be fine bulbs to flower at the next potting. — *Floral World.*

Cyrtanthus McKenii. — This pretty bulbous plant was discovered at Port Natal by Mr. Mark J. McKen, and was sent by him to Dr. Hooker, who has named it. It is described as a semi-aquatic, and seems to be extremely free-flowering; nearly all the bulbs received in the spring of 1868, though very small, having flowered in the autumn. The stronger plants produce from seven to eight flowers on a scape. The plant requires to be cultivated like imantophyllum; and blooming late in autumn, and being very sweet-scented like hyacinth, it may be recommended to florists. — *Haage & Schmidt, Erfurt.*

CYRTANTHUS MACKENII.

[A neat and interesting, though not a showy plant, evidently growing and flowering freely. The flowers are white, and are represented of the natural size in the detached figure shown in the margin. — *Eds.*] — *Gardener's Chron.*

Golden Champion Grape. — Those who have taken an interest in this new grape, and have planted it, will be pleased to hear, that at the June exhibition at Edinburgh, where fruit formed a feature of the exhibition, this grape was assigned the position of honor amongst white grapes of any kind, beating superb bunches of the Buckland Sweetwater. Two bunches exhibited in Mr. William Thomson's collection of six varieties of fruit, which took the first prize, formed the most striking object in the collection. Judging by the examples exhibited by Mr. Thomson, this new grape may be regarded as a valuable acquisition; and we shall no doubt have abundant testimony in its favor as the season advances. — *Vitis, in Gardener's Chronicle.*

Elephant Ploughs are now manufactured in England for use in Hindostan, and sent to the East by was of the Isthmus of Suez.

Planting Trees and Shrubs. — I wish to make a few remarks on this subject. We often see on large estates very great mismanagement in these matters. Of course, owners have a perfect right to plant whatever they please, and wherever they choose, regardless alike of failure or success, and I am willing to believe that in some cases they alone are in fault; but it is also equally true that gentlemen are often ill advised to plant trees and shrubs in localities where, from their very nature, it is utterly impossible for them to thrive, or where, at the best, they do but miserably exist, a disgrace to some, and an eyesore to all; the plants receiving the blame that is justly due to those who have had the mismanagement of them. I have seen the *Abies Menziesii* planted on a dry, warm soil, with a gravelly subsoil, so infested with red spider as to render it unhealthy and unsightly, and *A. Morinda* planted in low, damp places, where the young growth is generally killed by spring frosts; *Araucaria imbricata* dead and dying on cold, stiff clay soils that are not drained; *Cryptomeria Japonica*, brown and unsightly, and withered up by keen east winds; *C. viridis*, a most beautiful plant, thrown aside from the same cause; *Sequoia sempervirens*, injured to such an extent, by being planted in exposed places, as to be scarcely recognizable; and *Juniperus recurva* struggling for existence, covered with red spider. I have seen this, not in isolated cases, but frequently, and in different parts of the country and town; estates where there has been soil and situation admirably adapted for the above-mentioned, as well as other beautiful trees, shrubs, and coniferæ, which have in some instances been tried, and pronounced too tender for the climate, or something else; the fact being, that the wants of the plants were too little known or studied. How often do we see, perhaps adjoining a drive, a fine open place in a plantation, beautifully sheltered from the north and east, where the *Sequoia* would grow magnificently, and where the *Cryptomeria* would look as though at home! The same might be said of many more; but this must suffice. I wish, however, to offer a few remarks on pruning. When a large branch of a deciduous tree requires removing, the best place to take it off is at the protuberance caused by swelling, close to the body of the tree; the proper time about the middle of June (which is the best time to prune all deciduous trees), the edge of the outer bark being at the same time neatly trimmed off with a keen knife. The plane would doubtless succeed on the Thames Embankment, but would the scarlet oak? — *F. Flitton, in Gardener's Chronicle.*

The Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

Inquirer, Marlborough, Mass. — You will find a description of Van Buren's Golden Dwarf at vol. ii. p. 171 of this Journal, and of the Italian Dwarf at p. 287 of the same volume. The fruit of the former is a clingstone of good quality, though not so fine flavored at the North as in its native region. The tree is very handsome, with ample foliage of a fine color; and is worth growing as an ornamental object. The Italian Dwarf is almost too dwarfish to be useful.

How many kinds of fruit is it best to graft into one tree? — *Q. D.* Only one, as a general rule. There are many objections to more than one. It is rarely that two varieties are of exactly equal vigor; and the stronger one, if grafted into the same stock, is pretty sure to overpower and starve the weaker. Then, in gathering, if that work is intrusted to an ignorant person, as it often is necessarily, you are pretty sure to get your two kinds mixed up, even though they may be easily distinguished by an expert eye. In testing new varieties, it is of quite as much consequence to ascertain the habit of growth as any other point; and this can be well done only when a tree has plenty of room and the whole of the stock to itself. Sometimes it has been found advantageous to graft a small winter pear into the top of a tree, and an early one into the lower limbs; and, when the latter are gathered, the whole power of the tree will be directed to the late kind, which will then grow larger than otherwise. Still, we repeat, that, unless absolutely necessary to depart from it, we would follow the rule of one kind to one tree.

S. G. B. — Yes: the apples have a rather odd look for Baldwins; but they are no doubt correct. The natural habit of the Baldwins is, generally, to bear in even years; that is, 1860, 1862, 1864, 1866, 1868, &c.: and those grown the odd years are apt to have less color than those produced in even years, which form the great majority, and vary slightly otherwise from the normal type. As to there being two kinds, you will find, if you examine the fruit of a tree which grew from a single bud, two distinct types of Baldwins: the first more conical, or pearmain-shaped, than the other, with a short, thick stem; the second flatter, the stem long and slender, and with russet around it, spreading out in rays. The first type is produced from the central blossom in a cluster, and the second from those on the outside. The Surpasse Virgalieu Pear also has the habit of producing elongated specimens, which will always be found in the centre of a cluster.

X. Q. — The distinction between fruit and vegetables, in ordinary usage, is an arbitrary one; and no general principles can be laid down by which they can be distinguished. As a general rule, fruits are eaten at the dessert, and do not require cooking, while vegetables are cooked: but this distinction will not apply in all cases; for it would class the quince, and some varieties of pears, plums, and other fruits, among vegetables. The potato and tomato are closely allied: but the edible portion of the former is a tuber, which is a modification of the stem; while that of the latter, as well as of the egg-plant, which is another near relation, is the true fruit, botanically speaking. But, in the market, all three are classed among vegetables. Botanically, also, the cucumber and squash are fruits, as well as the musk and water melons: but the former are universally known as vegetables; while the latter are sometimes, and, as we think, very properly, known as fruits. They may, however, be found described both as fruits and vegetables.

Jennie June. — A jonquil is a narcissus. You were right. *Jonquille Campernelle* is a variety, and one of the best for house-culture. The silver jonquil is *Narcissus tenuifolius*, and is a very beautiful species.

GEORGE BONELLI, Tooele City, Utah. — The exact degree of cold which grape-vines of American origin will bear has probably not been determined in every case. Hardy and tender are relative terms. Here, by a hardy vine, we understand one that needs no winter-protection. To this class in Massachusetts belong the Concord and its seedlings, the Hartford, Clinton, Delaware, and some of the Rogers hybrids. The line where it will be safe to leave a given vine exposed through the winter cannot be drawn exactly. So far north as Massachusetts, it is much safer to lay down and cover with six inches of earth all out-door vines except those we have mentioned.

This involves some labor, and the vine must be trained with reference to laying it down; but we think it pays.

Again: hardiness, or freedom from winter-killing, depends on a vine's having well-ripened wood, as is noticeably the case in the Diana.

To the Editor of "The Journal of Horticulture."

THE soil where I live is deep, heavy sand. I have tried many, very many, varieties of fine strawberries; have never been successful in getting any of them to grow, blossom, or bear, except the common Red Alpine. Do you, or any of your subscribers, know of any really good and prolific variety which will thrive in our dry sandy soil, and under our tropical sun? The Red Alpine grown from seed grows profusely, and bears well, but has to be replanted every fall, as the stool comes too high out of the ground. *H. G. L.*

VOLUSIA, FLA.

Mr. William Watson of Brenham, Washington County, Tex., informs us that he has a seedling variety that stands the sun well in light sandy soil. He adds, "I have seen the plants flourish in soil that gets so hot in summer, that children cannot well walk barefoot over the sand. It is now growing in many parts of this State, and all do well. In San Antonio, Tex., where other kinds always failed, it is a perfect success, and has stood the hot, dry summer well."

D. E. M., Franklin, Mass. — Your plant is *Gentiana Andrewsii*, or Bottle Gentian, one of our prettiest autumn-flowers. It is easily cultivated, and makes a pretty border-flower.

IDEM. — Four-o'clocks (*Mirabilis*) make a very pretty mass in the flower-garden, and are well worth planting. The roots may be taken up in the autumn, and stored in the cellar until spring. These roots, in a few years, become very large, so that one will fill a large flower-bed.

A NOVICE, Worcester, Mass. — Your flowers are, No. 1, *Nerine coruscans;* No. 2, *Amaryllis Belladonna*, or Belladonna Lily. There is nothing the matter with the plants from their blooming without leaves. The growth was made during the summer: it died away, and the plant rested; then the plant flowered, and will immediately begin to grow. The treatment now must be to grow the foliage well, to strengthen the bulb, and secure bloom next summer. We admit that the effect would be better if the plant bloomed with the foliage.

S. C. B., Windsor, Vt. — Your snapdragon-seed will probably not produce the same colored flowers; as you have grown all the colors together, and they have probably mixed. The flowers you send are very good, and seed is well worth saving. Your seedlings may even be finer than the present plants. You can perpetuate the old varieties by cuttings.

X. — In packing specimens of choice fruit for transportation, use glazed wadding in preference to common batting; or else wrap the fruit in soft paper, so that the cotton shall not adhere. Be sure to press the cotton firmly around the fruit, so that there shall be no friction. The fruit and packing material both settle down in transportation; and the packing should be elastic, and firmly pressed in, so to avoid the possibility of friction. If the quantity is large, there should be a separate compartment for each specimen, especially for each bunch of grapes. Fruit sent to us for examination, or to ascertain the name, often arrives in such damaged condition, that it is impossible to judge of it; but, if properly packed, it comes in perfect order.

A New-Comer, Boston. — The "pretty variegated green, red, and white grass" you saw at the Horticultural Exhibition was doubtless *Panicum variegatum;* a very pretty and desirable plant, and easily grown.

The variegated abutilon (*A. Thompsoni*) is a lovely plant, and will doubtless do as well and bloom as freely in the parlor as *A. striatum*, which it nearly resembles.

Strange Bulb, Verona. — Your "crocus" which is blooming now (October) is not a crocus, though sometimes so called, but *Colchicum autumnale.* It is perfectly hardy; blooms in the fall; then in early spring sends up a mass of green foliage, and ripens its seed. There are white varieties, and many of different shades of purple; also single and double varieties, and other species of which *C. byzantium* is the best.

Farmer, Pawtucket. — We should not advise you to apply special manures, such as guano, &c., in the autumn. Much would be lost by the winter. Use them in early spring, spreading them on the late snow.

Mary C., Hartford, Conn. — Names of good and cheap hyacinths for water: *La Candeur*, single white; *Charles Dickens*, single blue; *Amy*, single red; *Garrick*, double blue; *La Tour d'Auvergne*, double white; *Emma Livry*, single yellow; *Siam*, black.

Canna. — The leaf and flower you enclose are those of the common Indian Shot (*Canna indica*). If, as you say, you bought the seed for that of a fine variety, you were deceived. Our experience is, that the canna-seed sold seldom comes true to name. The last few years have witnessed a great improvement in this plant: not only is the foliage larger, but the flowers are often very large and showy; and they promise to be among the most desirable of garden-plants.

ANXIETY, Ithica, N.Y. — No: you have not been "cheated" in the bulbs of Hyacinth *Laurens Costar* sent you. The bulbs of this species are always light and rough; but you will find they will give good bloom if planted in earth. This variety does not succeed in water.

IDEM. — A white hyacinth bulb will not always give you a white flower. Many of the white varieties have bluish bulbs. Color is no criterion.

O. J. REED, Taunton. — You should have pruned your *Pyrus japonica* hedge about the first of August: it would then have set bloom for next year. If too straggling, cut it in a little now; but delay your chief pruning until next summer.

H. T. M., Rutland, Vt. — No. 1 is *Aloe ferox:* the blossom is fine: the plant does not bloom until large. No. 2 is also an aloe; species undeterminable from the leaf. No. 3 is probably *Passiflora racemosa;* but send flower.

J. S. McC., Galesburg, Ill. — The yellow flower is probably Sanvitalia; but send foliage. The leaf mentioned as No. 2 was not enclosed. No. 3 is German Ivy; not a true ivy, but botanically *Senecio scandens.*

H. A. B., Middlebury, N.Y. — No. 1 is probably *Cynthia Virginica.* The difference between this species and *C. dandelion* can readily be seen in the field, as the former has a leafy scape and fibrous roots; while the latter has a naked scape and tuberous roots. No. 2 is totally indistinguishable from the leaf sent.

DOES anybody know any thing about the Weehawken Grape, in addition to the originator's statement in regard to it? *M.*

OLD FOGY, Hudson, N.Y. — Are dahlias worth growing? — Certainly, for those who like the flower. You must be your own judge. The dahlia is not as popular in this country as formerly; but it is very beautiful in spite of its somewhat artificial appearance, and large plants well grown are very effective.

A. V. G. ARCHIBALD, Luzerne County, Penn. —The specimens were received in good order. No. 1, which you had for White Doyenné, is Flemish Beauty. No. 2, which came to you as Beurré Robin, is correct; but it is more properly called Doyenné Robin, Beurré Robin being a synonyme. Both the pears are under size. The grape received as Union Village is also probably true.

H. L. STEWART, Middle Haddam, Conn. — 1st, The Nouveau Poiteau Pear is not thorny. 2d, Among good pears, the Dix is always thorny, but few others are. New varieties are apt to be thorny, but generally become less rather than more so. 3d, We think it probable that your trees are natural, and, unless they promise to bear very soon, would advise grafting at least a part of them.

C. B. W. — Best apples for dwarf stocks. — We have found the following to succeed admirably: Early Harvest, Red Astrachan, Early Sweet Bough, Garden Royal, Tetofsky, Rambour Franc, Fall Harvey, Porter, Hubbardston Nonsuch, Fallawater. The above will be found very beautiful as well as useful. The Dutch Codlin, which has the most beautiful blossom of any apple, of a very brilliant color, is worth cultivating on that account; and the fruit is also valuable for cooking.

What is the cause of aerial roots on grape-vines? — Aerial roots are only put forth in a warm, damp atmosphere, and, undoubtedly, this is the exciting cause; but we do not think that the amount of nutriment absorbed by them can add materially to the strength of the vine, though it may when developed to the extraordinary extent mentioned by Mr. Wilder in our March number as witnessed by him near Savannah. We once examined a very interesting experiment by Mr. J. F. Allen, who suspended, under aerial roots, bottles filled with water having various fertilizers dissolved in it. The bottles containing grape-vine ash and cow-dung were speedily filled with roots ramifying in every direction. Next to these, a very weak solution of guano appeared to promote their growth: a stronger solution soon destroyed them.

We have noticed aerial roots on the branches of an Isabella vine in a damp, shady place; but they are not often seen out-doors in this climate. They start from where the eyes *were* when the wood was young, and where there are still latent eyes, rather than from the internodes.

Our young State is developing finely in fruit-growing. I have never seen such apples as our trees *uniformly* produce here. They are beautiful and perfect, and the crop abundant on trees from five to ten years old. Our exhibitions for the last two annual fairs have been very satisfactory, and we hope, next September, to make a display at the Pomological Congress that will place Kansas where she belongs, — in the front rank of fruit-growing States. Peaches, also, do well. We were last season surfeited with them all over the State, and large quantities were canned. Pears are only beginning to be produced. As you know, there are really but few who appreciate pear-culture; while, with those who do, it is the fruit which excels all others when enjoyed in perfection. I have seen as fine White Doyennés, Duchesse, Bartletts, Louise Bonnes, &c., in Kansas, as I ever saw either in New Haven or Boston. I am looking for a fine crop this season. Our people are planting fruit-trees by the million, and I have no doubt, that, in less than ten years, your Eastern markets will be largely supplied with apples from Kansas. *C. B. Lines.*

Topeka, April 7, 1869.

SEEDLING-POTATOES.

By George W. Campbell, Delaware, O.

Some six or seven years since, in looking over a patch of potatoes known here as the Early-Biscuit variety, I saved a few seed-balls, which I threw into a drawer, where they lay undisturbed until a year ago last spring, when I planted them in a pot in one of my greenhouses in April. Contrary to my expectations, several seeds grew, and were potted singly into four-inch pots, from which they were transplanted to the garden about the first of June. On digging them in the fall, I was surprised to find many of the potatoes as large as hens' eggs, as I had always heard that potato-seedlings were, the first year, from the size of marrowfat-peas to that of marbles, and that it required *three* years for their full development. These seedlings varied considerably in productiveness: but they all had a general resemblance to each other, and also a strong family likeness to the parent kind, which was chiefly valuable for earliness, good size, and productiveness; not remarkable for quality, being rather yellow-fleshed, and somewhat waxy in texture. The second generation of these seedlings, raised

this season, produces some handsome, smooth potatoes, a part of them scarcely distinguishable from the parent; while others are whiter and less waxy: but none that I have tested are up to the standard of a first-class potato.

My success with these induced me to experiment further with seed saved from the Early Rose last season. These were also planted in the manner above described, last spring, from which I raised thirty-eight seedlings; and there seem to be almost as many varieties as there are plants. Some grew a single stem only a few inches high; while others threw up from two or three to a dozen, the largest plant covering an area of at least four feet square, and this *from a single seed* planted the past spring. I have been digging them since August as fast as the tops become dry, and find the product nearly as various as their other characteristics. The largest single potato produced, a knobby, irregular one, weighed thirteen ounces. All the potatoes in this hill were ill shapen, but yielded a little over two pounds. The smallest product was two small oval, red potatoes, weighing about half an ounce. Several hills, the product of a single seed, yielded two pounds and a half; but none have exceeded that weight.

Some of the seedlings are white-skinned, some pink (like the EarlyRose), some lighter, and others of darker shades of red. Some are very smooth, others more or less rusty-coated; and all have either shallow or prominent eyes. In shape, some are long and rather slender, some flattened-oblong, some nearly round, and others knobby and irregular. Some produce a large proportion of small tubers, while others are nearly uniform in size, and all large. In foliage, there is also a marked distinction; some having narrow, pointed leaves, others broad and rounded, some dark, and some lighter shades of green, some red or purple stems, and some green. So far as observed, the purple-stemmed plants have *white*, and the light-green ones pink or red skinned potatoes.

One of the most remarkable of these Early-Rose seedlings, which I dug Oct. 1, may prove of value as a late or mid-season variety. The accompanying drawing is an exact representation of its size and form. It is pink-skinned, a little lighter than the Early Rose, a little rusty-coated; surface very regular, smooth, and even; eyes few, and very shallow; really one of the handsomest potatoes I ever saw: and all in the hill were remarkably

smooth and uniform ; not a knobby or uneven tuber in the lot. In quality it is fine grained, very white, and well flavored. Boiled and tested with the Early Rose, it is scarcely distinguishable from it in taste ; but does not cook *quite* as dry and mealy as the Rose, being evidently a variety of later season, and will probably be better in this respect in winter and spring.

One other, a white-skinned variety, cooked with the Early Rose, seemed in all respects equal if not superior to it. It was handsome in shape, uniform in size, and yielded largely: but none of the tubers were as large as

EARLY-ROSE SEEDLING-POTATO THE FIRST YEAR FROM SEED.

Longest diameter	3 and 6-10 inches.
Breadth	2 and 7-10 inches.
Thickness	2 inches.
Weight	6 and 1-2 ounces.

the one figured ; the largest six weighing twenty-five ounces, or a little over four ounces each.

I shall, of course, carefully plant the most promising of these seedlings next year, and note the results. If any prove specially worthy, you may hear from them again. I cannot help regarding them as extraordinary *as seedlings of the first* year ; and the experiment seems to me worthy of record, and as promising valuable results.

I wrote the above some days ago, and thought I had made out a pretty good story; but I dug yesterday (Oct. 18), from the same lot of seedlings, one that fairly distances all the rest. I had noticed it during the season, as having the strongest growth and most abundant vines and foliage of all, covering an area of some four feet square, and remaining green and vigorous till touched by frost on the 16th of October. The result, as the product of a single seed planted the past spring, was astonishing beyond any thing I had ever conceived. I took thirty potatoes from this hill, twenty of which were of marketable size, their aggregate weight being six pounds; the remaining ten were smaller, and weighed but eight ounces; giving six pounds and a half from one seed. The largest potato in the lot measured six inches in length, three inches in breadth, and two inches in thickness, and weighed twelve ounces. In general appearance, it is much like the Early Rose; in color rather darker skinned, but perfectly white-fleshed; cooks dry, fine grained, and mealy; and is apparently equal to the Early Rose or White Peachblow. Should it continue to produce according to its promise as a seedling, it will doubtless be worthy of a name and place among really valuable varieties. I may mention that these seedlings were all grown in ordinarily good garden-soil, which had been cropped some five or six years without manure or fertilizers of any kind, except a slight sprinkling of muriate of lime, which I put about the stem of each plant in the spring, mainly for the purpose of keeping away cut-worms, which were very troublesome. The same application was made to all the plants; those that produced but an ounce or so, equally with this one, producing six pounds and a half.

Now, it may be that all this is not specially remarkable, and that others may have produced equal or greater results. But it is only by reporting what we have done, and comparing it with the work of others, that a true estimate of its value may be formed.

DELAWARE, O., Oct. 19, 1869.

HARDY RHODODENDRONS, AND THEIR CULTURE.

By S. B. Parsons, Flushing, N.Y.

Mr. Editor, — When I had the pleasure of seeing you in Boston, you expressed regret that I had not yet written for your Journal. I believe that I somewhat avoided the question; but the truth is, that, however much I may have been afflicted when younger with the disease called *cacoethes scribendi*, I was effectually cured by the want among many horticultural writers of those courtesies which are generally recognized as essential to the amenities of social life.

When I was a boy in New-York City, I was one morning going down Pearl Street, when I noticed before me a young man gotten up in the highest style of art. His white pantaloons were exquisite in their fitness; his coat, black with a shade of blue, was without a wrinkle; and the grace with which he swung a delicate cane in a jewelled hand showed a mind thoroughly satisfied with its outer covering. But, in dwelling upon the picture before me, I was suddenly reminded of the mutability of earthly things by the figure of a stalwart woman emerging from a cellar, and having in her hand a pail full of the various elements gathered from bed-room and cellar in the early morning. She did not notice my friend with the cane, and my friend with the cane did not notice her until he had received from her muscular hands the full contents of her pail in that part of his body which sailors would call "amidships." The wrath of the young man was somewhat terrible to witness, and the variegated appearance of those pantaloons was certainly not picturesque. But the wrath did not remedy the matter; and, as he cooled off, I passed on. The impression which the incident made upon me was, that, however it might be the vocation of some persons to throw dirt, it was not my vocation to receive it; and thereafter I made my daily walk on the other side of the street.

I was often reminded of this incident a few years after, when venturing to give my opinions through the horticultural press.

I found that subjects were rarely discussed on their merits, and that a personal fling was often made to take the place of argument. This mode of discussing a subject did not suit my taste. I could not fight with such

weapons, and so I gradually put myself out of the way of them. This was twenty years ago. Since then, manners have greatly changed by the entrance into horticultural paths of large numbers of intelligent and cultured men, who feel that it is just as wrong to strike a man a blow with a pen as to strike him with the hand.

And yet, if you will glance over the August number of "The Journal of Horticulture," and notice the personalities, which, without criticism, have been allowed in its pages, I think you will admit that one is not yet quite safe.

I gladly, however, reply to your question about rhododendrons, and to some others in your September issue.

The general question from those who are desirous to cultivate largely that unsurpassed plant, the rhododendron, is, "Why are so few of them hardy?" and, "Why are dead plants the chief result to those who plant largely?" The answer to this is contained in a few words: *The sorts they plant are not such as can bear our climate.* The rose will bear our winter unflinchingly; and yet no one, wishing a plant that would remain uninjured, would plant tea-roses. He would select the Junes or mosses or remontants.

What is the course generally adopted by those who wish rhododendrons? They see the foreign catalogues, are attracted by the low prices, and order them by the hundred. On receiving them, they find that the freight, the premium on gold, the exchange, and the duty, have brought them up to a price nearly equal to that of the grower in this country.

Paying thus the same price as he would pay for the same plant grown here, what does he get? He receives a plant well grown, well formed, and symmetrical, such as honorable men and good growers send to their customers in Europe, and which do well there. But they are grown in peat, and, when transferred to our totally different soil and climate, require years to overcome the change. So well is this understood with us, that, when we import a new variety, we do not expect much wood for grafting in less than three to five years after importation.

In past years, while our stock was too small for our demand, we have attempted to replenish it by large importations, but found the result so unsatisfactory, that we were compelled to abandon it except for seedlings and

stocks, and some varieties the wood of which we wanted, and for which we could afford to wait.

This element of time is very important. In our experience, if a nurseryman were to import a thousand grafted plants, he could cut no grafts till the third year: he might then obtain two and perhaps three thousand grafts, and it would perhaps be ten years before he could safely sell his propagation. This does not suit the rapidity of American movement.

The success of an importation, even after several years, is based upon the supposition that all the sorts imported are perfectly hardy here when once established; but the multitude of dead plants found everywhere prove that this is not the case.

The only rhododendrons which are reliable in this climate, where the thermometer is sometimes fourteen degrees below zero, are those which approach as nearly as possible to the pure Catawbiense. The Ponticum has its bloom-buds uniformly killed, and the Arboreum is adapted only to the greenhouse. Now, in England, France, and Belgium, the Ponticum is hardy; and in some parts of France, and perhaps in Southern England also, the Arboreum.

Varieties, therefore, showing strongly-marked Ponticum blood, are perfectly satisfactory to European purchasers, while here at the North they are almost worthless. Every winter gives them a blow, until finally they die outright. If an American customer orders from Europe a hundred or a thousand rhododendrons of assorted kinds, the grower there will of course send him what he thinks best, and in entire good faith; but those best plants *there* prove entirely worthless *here*.

We have imported for the last ten years all the best foreign sorts, and our number of varieties is now something over two hundred and fifty; yet, of these, scarcely twenty are such as we can recommend for culture in northern latitudes. Despairing of finding sorts abroad which would bear our climate, we have given our attention to seedlings, and have been able to produce a number of entirely reliable hardiness, and including every color, from the most brilliant scarlet to pink, mauve, blue, purple, and white. These will not be in the market for several years; and we are now confining our culture to a select list of well-tried sorts. Of these, we may safely name the following twelve as hardy beyond question. They grow as surely

and as freely as a willow, wherever a lilac will (unless limestone-soil should prove an exception); require no shade, and no extra preparation beyond a good garden-soil. I am sure that these varieties cannot be fairly planted without giving their owner entire satisfaction, and such satisfaction as no other plant can give; for no other plant possesses a tithe of their attractiveness both of foliage and flower. These varieties are, *Album elegans*, *Album grandiflorum*, *Bicolor*, *Celestinum*, *Candidissimum*, *Everestianum*, *Grandiflorum*, *Bertie Parsons*, *Purpureum elegans*, *Purpureum crispum*, *Roseum superbum*, *Roseum elegans*.

Some of these are our own seedlings, and others are European sorts which are little cultivated there now. *Grandiflorum*, for instance, one of our best varieties, and originally from Europe, is scarcely known there now; and, during a recent visit to the largest establishments in England and Belgium, we could not find it. We have imported the *Grandiflorum* of their catalogues, but find it very different from that known to us as so valuable.

All these things prove how difficult it is for Americans to rely upon foreign sorts. I know that several gentlemen have been successful with imported rhododendrons by planting in the shade and giving great care; but I am sure the general experience has been as I have stated.

I am certain of one thing, — that all who try either of the above varieties grown in this country will find the rhododendron to be the most superb plant and flower they have ever known. If such will come to Flushing in June, I shall be pleased to show them the effect produced by over a hundred thousand of such plants.

Before leaving rhododendrons, I would like to reiterate, that they need no special culture. Foreign gardeners will often insist that they need peat or other special soil. We plant, as we do all shrubs, in good garden-soil without peat; and their thriftiness there is proof of their adaptation.

Above all, do not plant them in the shade. They will not flower well there. Like all other plants, they need the sun.

The shade and peat fallacies have been great bars to successful rhododendron-culture. To obtain bloom the next year, or even good growth, it is absolutely essential to cut off the seed-vessels immediately after blooming.

I notice that one of your quotations from an English magazine expresses

regret that the *Cratægus pyracantha* is not to be found in the nurseries. It is grown here in large quantities.

You are right about the *Stuartia pentagynia.* It is the finest summer-blooming shrub we have of its season ; giving, when there is little else in bloom, a profusion of white, crimped, saucer-like flowers. You are not quite right, however, in stating that those who introduced it are now out of it. They were temporarily exhausted of it last spring, but now have a stock of several thousand.

But I have extended my remarks far beyond my first intention, and will trespass upon your patience no longer.

FLUSHING, Aug. 19, 1869.

[We fully agree with our correspondent's remarks on the style of the article to which he refers in our August number ; including his intimation, that we should have expressed our opinion of its spirit at the time it was published : but, having omitted it then, we embrace this opportunity to do so. Having published two articles on the same subject with that of the article in question, we felt that justice required us to give place to a reply : and we had no choice but to omit the article altogether, or to print it entire ; and chose the latter course, although we deemed some of it highly objectionable. — ED.]

CALIFORNIA FRUIT.

THROUGH the kindness of Mr. Wilder, we have had the opportunity to examine and test some fine specimens of apples and pears received by him from California. The Gravenstein Apple measured twelve inches and three-quarters in circumference, and was less flattened than is usual here. The specimens were not quite ripe. Beurré Clairgeau measured eleven inches and three-quarters ; Flemish Beauty, twelve inches and a quarter, yellow clouded with russet, and having a bright crimson cheek ; Seckel, full of rich, sugary juice, sweeter than when grown here, but less aromatic. Beurré Bosc was very fine-grained, melting, high flavored, and delicious.

Beurré d'Anjou measured eleven inches and a half, buttery and juicy. Sterling, brilliant color, very handsome, and of fine quality.

GRAPE-GROWING IN VIRGINIA.

By H. R. Robey, Fredericksburg, Va.

Having read so many communications in your valuable "Journal of Horticulture" upon the subject of grape-growing, and making of wine, coming from various parts of the country, many of the correspondents claiming to be in the most favorable latitude, and having the best soil, I have concluded to write out my experience and observations in Eastern Virginia.

We claim to have the soil and climate to grow the most vigorous vines and superior grapes. We have no large bearing vineyards now: nearly all were destroyed during the war. Every thing here is now in its infancy. Any good corn-land here will produce good grapes: but the best is a chocolate or brown loam; and when fresh from the woods, all the better.

In January, 1868, I cleared up four acres of land from the woods, removed nearly all the stumps, and did not allow any of the trash or leaves to be burnt; ploughed the land ten inches deep, and planted early potatoes in rows four feet apart.

In April, I planted Concord and Catawba grapes (in yearling plants) in every alternate row, and eight feet in the step, using no manure. The potatoes were taken up in July. The vines made a growth of about six feet, and some laterals. Last winter, I cut them down to two feet, and left one eye to each lateral. This spring, they started vigorously. I allowed all the branches to grow; and they have made from thirty to sixty feet of new wood, notwithstanding we have had the greatest drought ever known. The vines have now matured from ten to forty-five bunches of grapes, ready to be cut, and made into wine.

My trellis is made of heavy white-oak stakes, six feet and a half long, sharpened, and driven eighteen inches into the ground; making the trellis five feet high. For slats, I use cedar-poles, halved, and nailed to the post. The first slat I put two feet from the ground, one at the top, and one midway. I prefer a low trellis, as the crop is more easily gathered. This trellis presents a very rough appearance; but it is strong. It requires eight hundred stakes to the acre. I get them from my own woods; and the cost for getting the stakes and slats, and putting them up, is twelve dollars for an

acre. I know, when this communication is read by the knowing ones and the scientific, they will laugh, and say he is a greenhorn for letting his vines bear so young, and allowing so much wood to grow. In reply, I will say, I have been thirty years growing grapes, and have tried every way laid down in the books; close pruning three years before a grape was allowed on the vine, and then only a few bunches. Close pruning I think a great injury to the vine: the growth will be too great, and the wood soft. Visitors from other States say I am wrong for allowing my vines to bear so young, and predict they will soon be exhausted. I tell them, Thirty years' practice and experimenting enables me to know what I'm about. A gentleman from New York has recently purchased land here, and will plant a hundred acres in grapes. He said he would trench his land two feet; but when he saw my vines, and found that the land had only been ploughed ten inches, he said he would abandon the trenching; and he had long had experience in grape-growing.

The Catawba and Concord Grape will, in this chocolate loam, bear from five to eight good crops of grapes free from rot. When the old vines begin to fail by the grapes rotting, I turn out a strong cane, starting near the ground; in the spring, layer this cane half way between the vines, in a well-prepared bed: this layer will in two years bear a good crop of grapes. The old vines, after two years more of bearing, may be taken up. In this way you can keep up a good young vineyard, producing a full crop free from rot. The culture of the grape, and manufacture of wine, in the Southern States, is an interest worthy of much more attention than is supposed. The profits are very large for the labor bestowed; and there is no danger of overstocking the market. Our climate is the grape climate; our soil, the grape soil. The regular heat of our summers develops all the good qualities of the grape in great perfection. This fall, my vines will have the second trimming. If the cane is very strong, and the laterals good, I shall cut off all the branches and suckers, top the cane to six feet, and cut the lateral branches, leaving from two to five eyes. When the cane is not so strong, and has but few side-branches, I leave two; train the one that has the most spurs or bearing wood perpendicular, and the other horizontal, — the latter more to make bearing-wood for another year. I don't like to use manure as long as the vine can do without it. Animal manure should

never be used after the vines begin to bear: it causes the vines to grow too rank, the wood is not so firm, and mildew and rot will follow. Ashes and bone-dust are the best manures. The fertility of the soil may be kept up for many years by forest-leaves, earth from the woods or ditch-banks, and any vegetable-matter you can gather up. This may be spread upon the land, and lime sown upon the top.

Now to the question: What varieties of grapes are most profitable? I answer, The much-abused Catawba and the Concord. I have grown the Catawba for thirty years; and it has always given a good crop of sound grapes on young vines for, say, eight years. After that age, a very wet season will produce considerable rot. It makes a better wine than any other variety I have tried, and the wine will sell for more money. The Concord is a more vigorous grower, and will bear earlier, and a larger crop of grapes; but the wine sells for a less price. The Clinton is a very promising grape: it is much sweeter here than in the Northern States. The Hartford Prolific bears large crops; but one half of the bunch ripens and drops before the other half matures, and we look upon it as of no value. The Ives is a good grower and bearer, free from rot; ripens here with the Concord, but is not so good. Rogers's 9, 15, and 19 are good grapes, but no better than the Catawba, and rot on young vines: No. 4 is a good bearer, and of fine quality: No. 1 grows and fruits well; a fine table-grape. Union Village rots badly. Delaware is a very poor grower, except upon a deep sandy soil: on any other soil it mildews badly, and the grape will not ripen. Iona will not grow here, except upon sandy soil: the grape is very much like the Catawba, but not so rich. Cuyahoga grows and fruits well, and is very promising. Alvey is one of the most promising grapes I have ever grown; vine very vigorous; bears enormous crops; perfectly free from rot; fully equal to the Delaware in quality. The bunches are always full and healthy. It ripens here the first of September. It will grow well in any soil; but, like others, it has its preference. Why this grape has been so little noticed, seems strange. It is surpassed by none, and equalled by few. It has all the good qualities to recommend it, except size. The berries are of full medium size; bunches good size, and very compact; color black. We have several characters of soil here, — the gray loam, sandy soil, white or leachy, and the brown or chocolate loam: the latter is the best

for any crop, but especially for grapes. It is an easy soil to cultivate, and the vines grown in it are much more vigorous; and as I stated in the first part of this communication, if fresh from the woods, it will be worth fifty per cent more for a vineyard. Our poor, worn-out lands will require a good deal of manure to give the vines a good start; but we have a great deal of good land that will grow strong vines without stimulants.

In conclusion, I would say, Plough the land not over ten inches, plant shallow, cultivate shallow, and you will have vigorous and healthy vines and fruit. Sod-land well turned and limed is the next best to new land. Vegetable-matter is a very important element for the vigorous and healthy growth of the vine. Don't use animal manures if you can get wood-ashes or bone-dust.

Sept. 10, 1869.

A CURIOUS APPLE.

We remember seeing, some years ago, at an exhibition of the Massachusetts Horticultural Society, an apple called the "No Core," which, singularly enough, had two cores. We had also another apple, received from Messrs. Baumann, the French nursery-men, the "Hillars Grande," which showed the same extraordinary formation; and, in turning over the "New Duhamel," we came upon a colored plate of the "Pomme Figue," showing also a section of the fruit, and exhibiting the same peculiarity. We think it possible that the two varieties last mentioned are identical. The flower of the Hillars Grande was destitute of petals, or showed only what were supposed to be bracts in their place. The section of the flowers of the Pomme Figue given in "Duhamel" appears as if these supposed bracts were the sepals of the calyx of the second flower; one being superimposed upon the other, on the same axis. The fruit of the Hillars Grande was of a yellow color, with dull reddish-brown cheek, pearmain-shaped, tapering, with quite concave lines, and showing the five carpels very plainly in prominent knobs at the apex. It was sweet and rather dry, and of little value except as a curiosity.

POPPIES AND MARIGOLDS.

By Edward S. Rand, Jun., Boston, Mass.

In the now-popular mode of planting, where a great mass of color to produce a grand effect is the chief end sought to be attained, great opportunity is offered for the advantageous use of many old fashioned, common, and too-often-neglected flowers. These have not been cast aside for want of beauty, but have simply had their day, become too common and cheap to be of any value as an article of trade, and thus have been consigned to cottage-gardens, and the flower-borders which edge the vegetable patches of the farmer. What can be more effective all summer than a mass of portulaca? what more showy than the gay-colored poppies? And have September and October any flower which for brilliancy and richness of color can compare with the many varieties of French and African marigolds?

It is a good sign, and one which betokens a more healthy state of the public taste in gardening, that good old-fashioned flowers are once again becoming popular. For the last two years, we have used many of these old favorites for massing; and would now in a few words present to the gardening public the claims of marigolds and poppies.

Poppies first, however; for the marigold is eminently a September flower, while the poppy is in full glory in July and August. It would be difficult to find a flower which has been longer known than the poppy. Originally a native of Asia and Europe, it has been an inmate of gardens from the earliest time. The species are generally annuals; but there are some fine hardy perennials, and one is a biennial.

Of the perennials, the two most generally seen in gardens are *Papaver orientale* and *P. bracteatum*, — both rather coarse-growing, deep-rooting plants, which produce a profusion of brilliant red flowers in June, and then are uneffective, or become shabby for the rest of the season. There are also perennial species with white and with yellow flowers; but they are seldom found in cultivation.

It is to the annuals that we must be indebted for our summer display: and of these, two only, *P. Rhœas* and *somniferum*, are of special value; the others being either not specially showy, or not common enough to be readily obtained.

The earliest species is *P. Rhœas*, the small corn-poppy in its many varieties. To grow it requires no special care beyond sowing the seed broadcast in a light rich soil as early in the season as the ground can be put in order. The seed must be sown where the plants are to remain, as all poppies bear transplanting badly, and the annuals seldom survive it.

When the plants are about an inch high, they should be carefully thinned, and the leading shoots should soon after be pinched out. This treatment will make them branch, and give sturdy plants. If the plants are not nipped in, they will at once run into flower, set seed, and soon lose their beauty.

As soon as the flowers fade, the seed-capsules should be removed, as thus new flowers are thrown up, and the period of bloom prolonged. Seed should be saved only from the brightest colored and most double varieties. It is astonishing to see what innumerable colors and shades a packet of good seed will give; the brilliancy of colors in some flowers being no less remarkable than the delicacy of shading and tinting in others. Seed will sow itself all over the garden; and, when once the plants get fairly established, every year will give a new supply, and the only care necessary is to thin out the plants.

The most effective place for a bed of poppies is in the grass, some little distance from the carriage-drive; if possible, on a slope where you can look down upon them.

P. somniferum, the species from which the opium of commerce is obtained, is a far more stately plant than any of the varieties of *P. Rhœas*. The original color is white, and the flower is single; but the so-called "carnation-poppies," which are varieties of this species, are of all colors, and are very double.

Plants of this species should be thinned out to at least a foot apart each way, as they are strong growers, and, if judiciously pinched when young, become very large. The double flowers are as large as small pæonies, and remain for a long time in perfection. In general, the species only require sowing, thinning, and pinching, and maintain a good show of bloom (if seed is not allowed to ripen) far into the autumn. Like the last species, plants from self-sown seed will come up year after year; but a selection of the best flowers for seed is to be recommended.

It is a good plan to have both species in the same bed, as the one succeeds the other (*P. somniferum* and its varieties blooming later), and thus a succession of bloom is kept up.

The plants commonly known as MARIGOLDS are, botanically, *Calendula* or *Tagetes*. Of the former there are some twenty-five species, many being greenhouse perennials.

The flowers of all are yellow, orange, or white, and are very showy. The best known species is *C. officinalis*, commonly called the "English marigold." It is a pretty flower, and, in some of the improved double varieties, very brilliant, and has the merit of being always in bloom.

The culture is simply to sow the seed in good garden-soil, and to thin out the plants.

They bloom when very young, and continue to give flower until very late in the autumn. While very desirable in the garden, they are not effective in the mass, as the foliage is so abundant as to detract much from the effect of the flower.

It is to *Tagetes* we must turn for the most brilliant and effective flowers. Of this genus there are about twenty species, mostly annuals; but, of these, only three are commonly cultivated.

For a mass of yellow, there is no plant to compare with *T. tenuifolia*, commonly sold under the name of *T. signata pumila*. It is a low-growing, bushy plant, with fine-cut foliage and a rank smell. The flowers are small, single, orange-yellow, and produced in such profusion as to fairly cover the plant. A single seed will give a bush covering a space two feet in diameter, and the flowers last in perfection up to the first of October.

T. patula is the so-called French marigold, and *T. erecta* is the African; although both are natives of Mexico.

The latter grows from one to two feet high, and produces immense double flowers, varying in different plants from the lightest straw-color to the deepest orange.

The French marigold is most attractive, from the profusion and varied color of the flowers, which are of every shade, from bright yellow to deep brown, and are often beautifully variegated.

Scarce two flowers can be found alike; and a bed, or clumps, of this species, present a very gay appearance.

FRENCH MARIGOLDS.

The best culture for all three species is to sow the seed in a hot-bed or cold frame about the first of May, transplant to the open border about the

first of June, and allow the plants to take care of themselves. They will bloom abundantly until killed by severe frost.

While there is no more effective flower for the autumn garden than the marigold, it is also very valuable for parlor decoration. The flowers preserve their beauty a long time in water; and we have had them keep in good condition far into December. Although to many the odor of the foliage is disagreeable, it is only given off when the plant is bruised; and the varied shades of the flowers make a bouquet of marigolds very attractive.

Seed should be saved from the best double flowers, and all inferior varieties should be thrown away. Many of the single flowers of the French marigold, however, vie in color and shading with the double, and, to us, seem no less beautiful.

Our garden would lose a great charm were we to neglect our poppies and marigolds; and none, having once realized their beauty and effectiveness, will ever omit to plant them.

Glen Ridge, August, 1869.

KEEPING-QUALITIES OF GRAPES.

We looked over, on the 10th of November, a lot of grapes which had been saved to plant, and been kept in a rather warm room. The difference in their keeping-qualities was very striking. Some Ionas were plump and fresh, others somewhat shrivelled. The Onondaga was bright and plump, even better than the Dianas, although these were fresh and edible. The Martha was shrivelled and rotten. The Adirondac was wrinkled, but sweet and undecayed. The Israella had many plump and juicy berries, none decayed, and but few shrivelled. Allen's Hybrid was tolerably fresh, as were some of Arnold's. The Salem, not quite ripe when picked, was wrinkled, but not decayed. The Una was much like the Salem.

To sum up, we may say that the Iona, Israella, Onondaga, and Diana were in better condition than some twenty other varieties of which we had saved samples.

MORE OF CANKER-WORMS.

By W. C. Flagg, Alton, Ill.

Reading Mr. Manning's article on the "Canker-Worm," in the October number of this Journal, reminds me of a little experience and observation of my own that may be of some value in this connection.

Mr. Manning alludes only to another method of destroying this pest in saying "that by ploughing to the depth of six inches in the autumn many would be crushed, and others destroyed by the cold."

The canker-worm has never, that I know, done great damage in the apple-orchards of the West, except in Michigan four or five years since; but I have known of it in this neighborhood in insignificant numbers and varying localities for many years. Perhaps our clay soils and changeable winter and spring weather do not furnish very favorable conditions for its propagation. Still it is a great pest, what there is of it.

Downing, in his "Fruits and Fruit-Trees of America," as long ago as 1845 said, "Experiments made by the Hon. John Lowell and Prof. Peck of Massachusetts lead to a belief, that if the ground, under trees which suffer from this insect, is dug and well pulverized to the depth of five inches in October, and a good top-dressing of lime applied as far as the branches extend, the canker-worm will there be almost entirely destroyed."

Without having noticed this paragraph, I observed that the canker-worm, after appearing in considerable numbers in my orchard, disappeared after a late fall ploughing.

Dr. Benjamin F. Long, a large orchardist near Alton, gave the following testimony at the annual meeting of the Missouri Horticultural Society in 1867: "When I was with my father, he was much troubled with them [canker-worms]. He let in his hogs; and they rooted up the orchard, and destroyed the larvæ [chrysalids]. The next year the trees bore well, while other orchards were stripped of their leaves. Some years ago, the orchards of some of my neighbors were much affected by the canker-worm. They spread to my orchard, the trees of which were ten to twelve years set. I ploughed late in the fall, just before freezing, and destroyed all the canker-worms in the orchard. I have gotten them thus two or three times, and

always get rid of them thus. They increase very fast. Plough very shallow, so that you can freeze them. They come up with the first warm weather." I am not sure the doctor is correctly reported; but I think the quotation contains the substantial facts.

Jonathan Huggins of Woodburn stated at a meeting of the Alton Horticultural Society, that his own orchards and grounds were entirely free from canker-worms; whilst his neighbors, separated from him only by the public road, had many apple-trees badly infested by them. He attributed his exemption to the fact that he kept his grounds clean by cultivation, whilst his neighbor's orchard was neglected.

Hence I believe, that, with our soil and climate, late ploughing will probably be a sufficient remedy for the canker-worm. How it will answer elsewhere, I am not so confident. In more northern localities, late ploughing, or indeed the ploughing of orchards at all, except while young, may be injurious in preventing the perfect ripening of the new wood. In sandy soils, the caterpillar may penetrate deeper, and not be disturbed by the plough; or, if disturbed, may be less exposed.

It is a good rule to attack all noxious insects at that point in their development where they can be destroyed by wholesale methods; and this is generally in the larva or pupa state, as they are then less active, and in more uniform conditions.

Clean culture is a good general preventive against many of our orchard-insects. The apple-borer, the peach-borer, the curculio, and the canker-worm are more numerous in neglected grounds.

Since writing the above, I find the following rather contradictory evidence in "The Iowa Homestead," by William P. Lippincott of Vernon, Ia. I add it as a corrective.

"A few years after this, the canker-worms made their appearance in the orchard; and this proved to be the most troublesome pest of all. The books and papers, some of them, recommended ploughing late in the fall. After trying this four or five years, it was found that this was the very best way to assist their propagation, as it left the ground full of harbors for the next year's breeding. . . .

"Then, next, the hogs were turned into the orchard; and this exterminated the worms; and they cannot come back while the hogs are there."

Alton, Ill., October, 1869.

A DISTINCTION WITHOUT A DIFFERENCE.

By Francis Parkman, Jamaica Plain, Mass.

Incorrect nomenclature is said to be the vice of commercial gardening. To this we would add the vice of superfluous nomenclature. The needless multiplication of names may be, and doubtless often is, a source of profit to nursery-men ; but it is no less a source of loss and vexation to their customers. Distinctive names are given to varieties which are no-really distinct. We will point out a few examples in the family of lilies, whereby we may save some of our readers a needless expenditure both of money and good-humor.

We begin with a flagrant instance, in which we ourselves have been "let in." Some years ago, a list of new lilies from Japan appeared among the "novelties" in the catalogue of a European nursery-man. They bore names of which the following are the principal examples : *Kikak*, *Gemi-gajo*, *Syjets*, *Liu-kiu*, *Feu-Kwam*, and *Jachal*, besides several more, equally fantastic. Now, with the exception of *Liu-kiu*, these are mere varieties of *L. Thunbergianum*, in no way remarkable, being neither distinct from each other, nor from other varieties of the species. *Jachal* and *Feu-Kwam* are yellow and orange-scarlet. The rest are yellowish-buff, with a few small black spots. Whether the trick originated with some enterprising Japanese gardener, or with some equally enterprising spirit on the other side of the planet, we cannot say.

Liu-kiu, we have said, is different from the rest. And this leads to another illustration of our subject ; for it is nothing but the familiar *L. longiflorum*, with a slight elongation of one of the petals, which is far from improving it, and makes a very indifferent argument for charging fifteen cents for the one, and a dollar for the other. *L. longiflorum* has other twin-brothers, high in price, yet scarcely differing from it except in their christening, though costing from three to ten times as much. One of these is *L. eximium*, in which nothing but the most attentive examination can detect the faintest difference from *L. longiflorum*. *L. Takesima* is a little more distinct ; for its stem is shaded with a dark hue, and its growth is a little taller : yet only a close observer can see the difference.

L. aurantiacum has also been divided into varieties which ought to be suppressed, as to common eyes they are all alike; and the most accomplished expert could not distinguish most of them without the tally. The fact that one seedling variety blooms three days in advance of another is no sufficient reason for calling it *Lilium aurantiacum superbum præcox*, and quadrupling its price.

Again: we have *L. chalcedonicum* and *L. chalcedonicum elatum;* the superior height of the latter, indicated by its name, being not at all conspicuous. There is also a *L. candidum speciosum*, which is, to all intent, the same as the common *L. candidum*, or white garden-lily.

Many of the so-called varieties of *L. lancifolium* are indistinguishable. Those called *speciosum* and *rubrum* are absolutely the same; and *roseum* differs from them only in a lighter shade of color, often imperceptible.

These examples will perhaps suffice. We speak from unpleasant experience, as we once imported all the nominal varieties of lilies to be found in European catalogues, then about a hundred and fifty in number, about a third of which proved no varieties at all. May our readers profit by our misfortune!

THE WALTER GRAPE.

We are indebted for the specimen from which our illustration is made to Messrs. Ferris & Caywood of Poughkeepsie, N.Y., who, in a note accompanying it, say, "We send you an average cluster of the Walter by express. It will not do the Walter justice, as we had got all our best clusters off the vine. We could have sent longer clusters; but they were not shouldered, our shouldered ones having been used up. We had one cluster at Philadelphia which measured five inches long."

The cut is an exact representation of the specimen sent. Our description is as follows: Bunch medium size, shouldered, very compact; berries not uniform in size, crowded, resembling the Diana very much in this respect; average size of berry about medium, like Diana; form of berries round or slightly oval; color that of a ripe Delaware, with a purplish bloom; berries sufficiently transparent to show the seeds when held up to the light; pulp

somewhat tough; skin pretty thick; flavor sprightly, resembling Diana; seeds small and plump. Said to be a cross between Diana and Delaware; but resembles the former much more than the latter. There is, however,

THE WALTER GRAPE.

one serious fault of the Diana, from which the Walter appears to be entirely free: the former ripens very unevenly, while the latter ripens its berries uniformly.

We regret that we could not figure this variety earlier; but we were unable to procure a specimen last season.

GRAPES IN 1869.

By J. M. Merrick, Jun., Walpole, Mass.

We have not had so good a season for grapes as the present since 1864. All varieties that usually ripen well have ripened perfectly; and some that seldom mature here have had time enough this fall for complete development.

Allen's Hybrid and *Alvey.* — Foliage healthy where other vines mildewed. No fruit.

Adirondack. — A delicate, feeble grower. It taxes my patience severely. I have a row of vines — Crevelings, Ionas, and Adironacks — planted at the same time; and, while the first two have borne two crops, the Adirondack has made only a few knitting-needle canes, and not shown one berry. Mildewed considerably.

Concord. — Bore full, and ripened splendidly. No sign of disease. In blossom June 18. It is a rather curious fact, and shows how the popular taste runs, that Concord grapes were selling in the Boston market, the first week in October, for *sixty* cents for a three-pound-and-a-half box; while the same weight of Delawares could be bought for half a dollar. It seems to me that inexperienced people must be deceived by the *color* of the Delawares, and think them unripe.

Cynthiana. — A free-growing, healthy vine. No fruit.

Clara and *Clinton.* — Discarded.

Creveling. — This variety behaved well; set tolerably compact clusters, which were fully ripe and very fine between the 15th and 20th of September. For market, I suppose they could have been picked and sold before the 15th. The leaves held on well, and only a few of the lower ones mildewed. The Creveling will gain friends if it keeps on like this.

Cottage. — My vine pushed its shoots too early, and was frost-bitten, but made a good strong second growth. The fruit is Concord-like, but sweeter, and possibly has less native flavor, but drops from the stem like the Hartford.

Delaware. — Blossomed June 20. The leaves mildewed a little; but the mildew was checked by sulphur. Ripened well.

Diana. — In blossom June 20. Mildewed a little. Ripened unevenly. A few rotten and shrivelled berries. Some large vines, covered with pine-boughs, killed to the ground last winter.

Diana-Hamburg. — Discarded.

Dana. — Good growth ; slight mildew. No fruit.

Eumelan. — My one vine, in a damp, shady place, grew pretty well, but mildewed.

Franklin. — Vigorous and rank. Needs long pruning, and is good for nothing.

Hartford Prolific. — Ripened very unevenly, as did many bunches of Concord.

Hermann. — Slow grower. Wood very short-jointed. Healthy.

Iona. —Vine vigorous, healthy, productive, and free from mildew. Some bunches were tolerably ripe by Oct. 10, but not so sweet as they should be. At any time after the first of September, an eatable berry could be found here and there ; but the main crop seems to get about one third or half ripe, and then to "stick."

Israella. — Moderate growth ; in some cases feeble, with mildew.

Janesville. — Moderate grower. Mildew on lower leaves.

Josephine. — Slender growth, and badly mildewed.

Logan. — Discarded.

Martha. — A picture of vigor and health. No fruit.

Nonantum. — Moderate growth. Mildewed a little.

North-Carolina Seedling. — Good, healthy vine. No fruit.

Rebecca. — Grew six inches, and then mildewed.

Rogers's 4. — Ripened well.

No. 15. — This bore abundantly, and ripened perfectly. The 15 should not be eaten till completely ripe ; and then I like it about as well as any out-door grape. The vine must not be pruned too closely.

No. 19. — I had larger bunches than ever before ; but I think, in quality, it ranks below 4 or 15.

Salem. — A good healthy vine. No fruit.

To Kalon. — Discarded. Utterly worthless.

Una. — Cut down by frost. Good second growth.

Union Village. — Healthy growth. Fruit almost ripe Oct. 7. As a freak

of Nature, I may instance a seedling I have raised from this variety. It is a grape smaller than the Clinton ; *white*, sour, and worthless. The foliage is an exact reproduction of that of the parent plant. I may add, that the strongest-growing seedling I raised this year was from the Eumelan ; and the healthiest, in a bed where three-quarters mildewed, was from the White Riesling.

Weehawken. — A peculiar and noticeable vine, of slender growth, and somewhat foreign aspect. Did not mildew. I should be glad to hear about this variety from some one who has fruited it.

I have used sulphur considerably on mildewed vines this summer. I think its effect was marked on Delawares, but elsewhere not so plain. I could not see that very frequent and abundant applications to a bed of mixed seedlings stayed the ravages of mildew at all.

I may note here, that, though I have not yet learned to graft a vine, I have succeeded admirably this year in inarching the young shoots of vines that grow near each other. The ease and certainty of this method of union give it a claim upon the attention of amateurs at least. All that is needed is to shave off the bark and a very little of the wood of two young shoots on neighboring vines, and then to bind the cut surfaces tightly together. I prefer twine for this, as it contracts when it gets wetted. In three weeks, they will partly unite ; and the shoot that furnishes the *scion* may be cut half off *below*, and the stock wholly off *above*, the juncture of the two. In six weeks the union is complete, and the scion may be severed from its parent vine.

I picked the few rose-bugs that showed themselves this season ; but, in the neighboring town of Medfield, Mr. Edward Sewell lost his whole crop on an acre and more of Concords by neglecting to destroy these abominable pests.

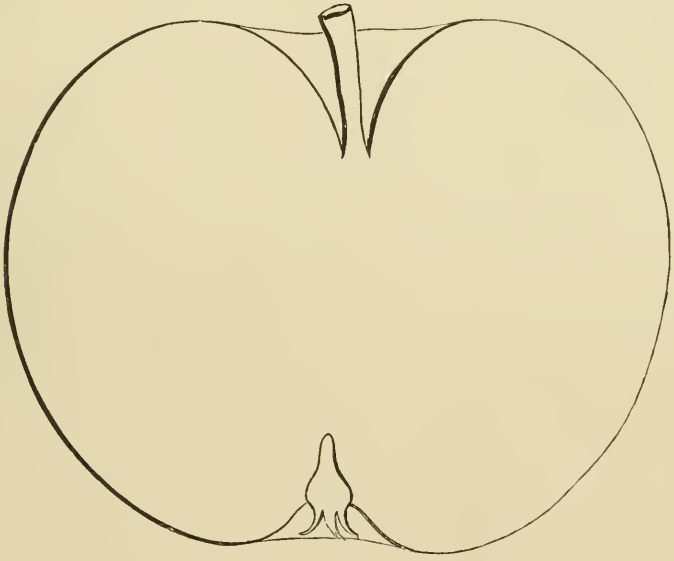
The encouragement of this favorable season was certainly needed by the faint-hearted; and I believe that all grape-cultivators hereabout feel more enthusiastic about the future than ever before.

Oct. 11, 1869.

THE STARR APPLE.

By Charles Downing, Newburgh, N.Y

Specimens of this new large early apple were sent us from William Parry of Cinnaminson, N.J. ; also from Samuel W. Noble of Jenkintown, Penn. Mr. Parry says it originated with John Starr of Woodbury, N.J., some years since. Tree a vigorous, upright grower, similar to Large Early Bough, but more slender branches. A valuable market variety, and a good bearer, having produced fifteen bushels this season.



THE STARR APPLE.

Fruit large, roundish-oblate, obscurely ribbed ; skin greenish-white or pale yellow at full maturity ; it has sometimes a shade of red in the sun, and is moderately sprinkled with light and brown dots ; stalk short, inserted in a large deep cavity ; calyx closed ; segments quite long, slender, irregularly recurved ; basin large, deep, uneven ; flesh whitish, crisp, tender, juicy ; flavor sprightly sub-acid, very good ; core medium. Ripens last of July and first half of August.

RUSSIAN APPLES.

By Robert Manning, Salem, Mass.

The varieties of apples of Russian origin have succeeded so well in the colder parts of our country where other kinds prove too tender, that I have thought it might be well to group together all the kinds known to have come from that source, including not only those which have been tested, but those which may be worthy of trial.

The *Alexander* is well known for its size and beauty. Skin whitish or greenish yellow, striped with brilliant red, the darkest streaks taking a purplish tinge. The tree is vigorous and of spreading form, and reasonably productive. I have found the fruit apt to drop prematurely, and sometimes to rot on the tree. The flesh is sub-acid without any fine flavor. To my taste, it is only valuable for cooking; but, from its size and beauty, it commands a high price in the market. In use from August to October.

Duchess of Oldenburgh. — This succeeds perfectly, and proves quite hardy from Bangor, Me., to the extreme North-west. Mr. Berckmans also reports very favorably of it at Augusta, Ga. Though only of tolerable quality for a dessert-apple, its hardiness and beauty render it one of the most valuable of all. It is of a pale yellow color, beautifully striped with red, and covered with bloom. The tree is vigorous, and forms a round, open head, and produces abundantly. Ripe in September.

The *Borovitsky* I have had, but never fruited. Mr. Downing remarks, that there may be a distinct variety of this name; but with him it had always proved identical with Duchess of Oldenburgh. It appears to me that there must be a distinct kind, as they have uniformly been described as different in the London catalogues.

Red Astrachan. — Probably there is not a native apple so universally cultivated throughout the United States, north and south, east and west, as this foreigner. It seems to succeed everywhere. I saw it last winter growing as far south as Jacksonville, Fla., in Col. Hardee's grounds. He had grafted it on a thorn stock, on which it appeared to thrive vigorously. It seems to be also cultivated in Sweden, as it was imported from thence into England. I have seen complaints from Michigan that the tree did not

come early into bearing ; but here it bears so early and abundantly, that it does not attain a large size. The fruit is unsurpassed for beauty, the skin being of a deep, rich crimson, except where shaded, and specked with yellow dots ; the whole covered with a thick, rich bloom. It is not of the highest quality, but quite acid, and without any rich flavor. Around Boston, this and the Williams have nearly superseded all other summer apples for market. Some of the stock of this variety has the leaves blotched with white ; and this characteristic is perpetuated in grafting.

The *White Astrachan* has not proved as good as the Red. I do not know whether it has been tried at the North ; but, if it has not, I should think it might be worth while to make the trial. Ripe in August.

Tetofsky. — This is now being sent out as a new apple, at a high price ; but it is not by any means new. It was received by my father from Michael Floy of the Harlem (N.Y.) Nursery previous to 1838. I find it on his catalogue for 1832, and in the first edition (1826) of the London Horticultural Society's catalogue. It has been called " Russian Crab," though it has no affinity whatever with the crabs ; and is also said by Mr. Downing to be erroneously called, by some, " Fourth-of-July Apple."

The fruit is of conical, rather flat form, pale yellow ; towards the sun, streaked with red, and covered with bloom. Though not as showy or large as the other Russians, it is an apple of delicate and attractive appearance, and much the best in quality, being a fine dessert-fruit. The tree is of very peculiar growth, with stout, upright shoots of a reddish color, not branching much in the nursery. It bears very young, — sometimes at only two years from the bud. The foliage is also peculiar, — large, long, oval, glossy leaves, somewhat hollowed on the upper side. It succeeds admirably on dwarf stocks. A very abundant bearer, clothing the limbs with fruit. Ripe early in August.

I notice that Dr. Warder writes the name " Tetofski ; " but I know of no other authority for this spelling.

Charlomoski. — This was received by my father from Messrs. Baumann of Bollwiller, France, in 1836. In their catalogue of that date, it stands among varieties newly received. It is not equal in quality to the Tetofsky, but very handsome, pale yellow, striped with red next the sun, and covered with a thick bloom, presenting a most delicate appearance. The foliage

is very large, but not glossy. In the nursery, the growth resembles Tetofsky; but it heads better, the shoots starting out at right angles with the stem, and afterwards taking an upward direction. When older, the bark of the stem has a peculiar appearance, somewhat resembling that of the striped maple or moosewood. Though not as richly colored as the Red Astrachan, it is quite as beautiful; and I should also rank it quite as high in quality. Ripe in August.

The *Rambour Papeleu* is described by Mr. Downing as of Russian origin, and a vigorous, productive tree. Fruit large, deep rich yellow, spotted, striped, and splashed with shades of rich red; flesh yellowish-white, rather coarse, breaking, sharp sub-acid. November to January, and promises well for market. I am not acquainted with it; but, if it proves as hardy as its brethren, it will be valuable, as it keeps much later than any of the others.

Dolgoi Squoznoi. — I do not know that the apple which bears this pretty name has been tested in this country. In England, it was formerly supposed to be identical with the Sugar-loaf Pippin, but is now described as distinct. The name signifies "long transparent." It is of a pale-green color, long conical shape, medium size, and of second quality for dessert. Ripe in August.

It will be noticed that most of these apples differ from English and American varieties in their waxen bloom and large foliage, of a dull, rather pale green. With one exception, they ripen in summer or early autumn. It would be desirable to try whether varieties equally hardy, and of better quality and longer keeping, could not be raised from their seed, either by natural variation, or by hybridizing among themselves or with other hardy kinds.

THE COMMELYNA.

This plant is generally treated as an annual; but if the tuberous roots are taken up in the autumn, and kept in the cellar, they will, the next season, make far better plants than can be procured from spring-sown seed.

A bed of the blue-edged with the white variety is very showy.

NEW VEGETABLES FOR 1869. — No. III.

By Fearing Burr, Hingham, Mass.

Lee's Giant Orach, or Mountain Spinach. — This variety of orach evidently originated in England, although the seeds were obtained from Prussian seedsmen. The plant is a strong grower, erect, much branched, and, in good soil, attains a height of six feet and upwards. It strongly resembles, and is closely allied to, some of the species of *Chenopodium*, or weeds commonly known as "goosefoot," and, when fully developed, really presents the appearance of a gigantic specimen of some of these vegetables. The leaves, which are produced in great abundance, are somewhat triangular, five or six inches long by nearly the same in breadth, whitish, and powdered beneath, thick, tender, and fleshy. The flowers are numerous, greenish, and unattractive.

The plant is a hardy annual of the easiest culture. The seeds should be sown in April or May, in rows two feet apart; and, as the plants require much space, they should be thinned to nearly the same distances in the rows. The leaves may be cut for use as soon as they attain a suitable size: but the cutting should be moderate until the seedlings have become well established; after which, not only the leaves, but the young sprouts, may be gathered freely. The yield is immense, and a few plants will supply the table of almost any family.

Though highly relished by some persons, it is "spinach" scarcely more than in name, as it is deficient in the delicate buttery quality for which true spinach is so much esteemed. On the whole, it appears to belong to that class of spinaceous plants which a cultivator has described as being destitute of the "bland, buttery bitterness and appetite-provoking odor" of genuine spinach, and which, on account of their wholesomeness and negative excellence as regards flavor, are admirably adapted to the service of those unfortunate persons who have never been able to discover in real spinach "the charm it has for that happier portion of mankind who can conscientiously regard it as a luxury, and ask for more."

Among the numerous kinds of orach we have tested, or that have come under our observation, including the green, white, lurid, purple, yellow,

and others, Lee's Giant excels in height, sturdiness, and vigor, and greatly in productiveness.

Seeds for the trial were received from Messrs. Curtis & Cobb of Boston, Mass.

Pear-shaped Blood-Beet. — This is a good table-beet, and is particularly desirable on account of its rich, deep blood-red color, which is well retained after boiling. The leaves are erect, of medium size, and, like those of the common blood-beet, of a deep purplish color throughout. The roots are decidedly pyriform, and never attain a large size ; which is perhaps a recommendation. They are uniformly of a brownish purple without, very deep red within, and measure on the average four or five inches in length, and two in diameter. The flesh is fine-grained, and peculiarly sweet and tender, not only while the root is forming, but even after full maturity. It promises also to be a good sort for winter use, and must be regarded as an acquisition.

The variety somewhat resembles the Half-long Blood, but is really quite distinct, inasmuch as the foliage is larger, and always erect, and the roots are smaller, smoother, and much more symmetrical. They are, further, readily distinguished by the difference in form.

CRITIQUE ON THE NOVEMBER NUMBER. — *Treatment of the American Grape-Vine.* — "American grapes, like American genius, do not like to be trammelled," was a characteristic remark of the late William R. Prince at one of the meetings of the American Pomological Society; and our cultivators are beginning to find out the absurdity of keeping grape-vines in the space of currant-bushes because it is done in European vineyards. I have had an Elsingburgh vine, with a space of eight feet wide and as much in height allotted to it, — a pretty reasonable amount of room, as I thought; but, so long as confined to that space, it produces plenty of wood, but never a berry. Let it run at its own sweet will, however, climbing over all the neighboring trees, and then the clusters hang thickly as grapes can hang on a vine. But I must confess to a feeling of pain when I see such a quantity of young shoots and leaves pruned off a vine as must be under Mr. Byington's system; and I don't quite see why removing it in June should not destroy the balance between root and vine just as much as if the same canes, without the summer growth, had been removed in November. But, anyway, Mr. Underhill's article is not only a capital one in itself, but will have an excellent effect in promoting discussion of the new doctrines he puts forth; and is alone worth the price of a year's subscription.

A Chapter on Everlasting Flowers. — The Golden Eternal Flower is an old friend of my youth; and now Mr. Breck introduces us again to it and all its relations. He has chosen a good time, just as the shades of winter are gathering round us, to present us with his bouquet of "immortelles" to cheer us during all the storms that will darken the sky before the snow-drops bloom. His remark, that he sees no reason why our native everlastings might not be colored

after the French fashion, reminds me that I have seen it done ; and I quite agree with him, that it did not improve their appearance ; and, instead of "adding perfume to the violet," it must destroy the delicate fragrance of the flower in its natural state.

Mr. Flagg's plan for *Planting an Orchard* can be fully appreciated by those who have had the pleasure, as I have, of gathering fruit from a great collection of specimen-trees, where, if there were two of a kind, they were pretty sure to be far enough apart to exercise my pedestrian powers pretty thoroughly ; and it would truly be delightful to tend his carefully and systematically planned fruit-garden after working in one which never had a plan, but, like Topsy, "only growed."

Variation of Flowers from Seed. — Is there any thing in the whole round of culture more fascinating than watching the transformation of flowers when guided by a skilful hand like Mr. Parkman's ? I know of nothing, unless it is producing a fine new fruit ; and flowers have this advantage, that one need not wait until he gets to be a grandfather before receiving the reward of his labors. I am glad to see the record of such experiments ; for I look on it not merely as gratifying curiosity, but adding to the data from which we may deduce the laws which govern these transformations : for, though called "sports," I cannot doubt that they are governed by laws ; and, though some of my friends think it hopeless to attempt to discover them, I have seen too many impossible things done, to set a limit to the progress of our knowledge in this direction.

Strawberry-Culture. — Why take out the "old row" before picking ? Does not the loss of berries from fourteen inches lessen the product to a greater extent than the picking without the path ? After picking, might not the old row, and as much of the new as necessary, be taken out at one time, and thus labor be saved, and the field left the same as by the other method, for the next season ?

Gossip from Southern Iowa. — I do not wonder that "Hawkeye" asks the question, "What grapes *do* succeed in Massachusetts ?" I often think, while working among my own or when admiring my neighbors' vines, how applicable to us would be the declaration, "Thou shalt tread upon olives, but shalt not anoint thine head with oil." We cultivate vines, but are seldom drunken with the product of our own wine-presses ; and our markets are not often overstocked with well-ripened fruit of home-production.

Our failure cannot arise from inexperience, or lack of good cultivation ; for, notwithstanding "the sad tale seems all one way," vines are still set, and labor and expense lavishly bestowed to make grape-culture a success. Where, then, is the difficulty ? Can our severe winters and short summers account for the failure ? Does our proximity to the sea so cool the heat common to inland districts, that the ripening is retarded in consequence ? And again : does it follow, that, where the Catawba will succeed, every other variety ought to do well ? It may indeed seem so ; but slight differences of soil or climate, I apprehend, often produce marked effects when the cause is not apparent. If any one urges that grapes have done well this year in Massachusetts, I admit it ; but the past season has been as exceptionally favorable here, as in the West it has been exceptionally unfavorable.

A few climatic statistics extending over the whole or a part of the twenty years since the Isabella and even the Catawba yielded abundantly, uncared for, would be very important at this time, as they might throw some light on the difficulty. How is our climate changing? and how is it affecting vegetation? are important questions.

The Wilson's Early Blackberry. — How rapidly is the list of varieties of the blackberry being increased! It seems but yesterday that the old "Dorchester" made its timid call upon the public, modestly claiming merit enough to be included among the kinds of small fruits worthy cultivation. Scarcely had it become generally recognized, ere a rival variety appeared in the Lawton, or New Rochelle, quickly followed by Newman's Thornless, the White, — what a misnomer! — Cutter's, Holcomb, Kittatinny, the Wilson's Early (so finely figured in the Journal for November), and undoubtedly many others familiar to you, Mr. Editor, but unknown to me.

You may esteem me fastidious; but I dislike a white blackberry. Its dull, flesh-pale color is not only unattractive, but, as I regard it, unnatural. For one, I should prefer to give up some measure of quality, rather than to substitute any color for the rich, glossy black the grains of the fruit put on in their full maturity, looking as though carved from jet itself.

I am satisfied, however, that the plant should not be recommended for small enclosures. It increases rapidly, and, rambling about one's premises, makes itself altogether too familiar, — along my terraces, in my grape-border, among my bedding-plants, associating with my raspberries, visiting my patches of peas and potatoes; in short, turn which way I will, there is the ubiquitous blackberry. Depend upon it, Mr. Editor, no species of small fruit can be more easily grown. Once well established, be it in a neglected corner or otherwise, and I assure you, you will raise blackberries *nolens volens.*

The Mexican Ever-Bearing Strawberry. — Yes, I remember the Stoddard's Alpine; and I have not the slightest doubt that Mr. Campbell is correct, and that the Mexican will follow in the track of that and Higley's and Newland's. But, even allowing it to be a new variety, bear in mind that the season just past has been exceptionally favorable at the West to such fruits as this is claimed to be; and that the crops which have been reported could not be expected in a dry season, or even one of average moisture. And then, again, supposing it to be all that is claimed for it; supposing it will produce a fair crop every year: it is an indisputable fact, — which, however, people are just beginning to recognize, — that no fruit is much relished after the ordinary season is past; and no ever-bearing berry whatever has presented sufficient inducements to plant it on a large scale. Take the ever-bearing raspberries, for instance. Who plants them? Why, a few people who fancy them, but a most insignificant minority of the berry-growers. Are they ever seen in the market? I never heard of them there. So, plant the Mexican Ever-Bearing Strawberry if you will, but plant it cautiously.

Bresee's No. 5 Potato. — Mr. Bresee's success in the production of seedling-potatoes has certainly been most remarkable. I think some one has pronounced them "an agricultural wealth;" and such they now give every promise of being to our country.

In the grounds of the Messrs. Sutton, near Reading, Eng., a hundred and twenty-six varieties of the potato were tested the present season. Respecting some of these, this little extract from "The Gardener's Chronicle" will tell its own story: "The much-vaunted Early Rose was here, very small in produce, and not at all coming up to expectation. Another American variety, the Early Goodrich, was growing alongside the former, — round, smooth, and clean skinned; and this is about all that can be said in its favor." However well varieties of English origin may succeed at home, I have not yet seen one that could be considered worthy of cultivation in this country; and, from repeated reports of the failure of our choicest kinds when grown in British soil, it would seem that our foreign friends have just grounds for making a similar statement with reference to those of American production.

The Windsor Pear. — I am glad to see you have given this miserable, showy pear a good, hard hit. Do make haste, O ye pomologists! and supersede it with something better. If there is a man who thinks our bountiful Mother Nature has no possibility of any thing better in store for us, I advise him to extend his acquaintance with her just as quickly as he can, and learn the abundance of her resources. *Bismarck.*

Effects of a Dry Climate. — California wheat is so dry, that in coming East, through and into a humid atmosphere, it gains greatly in weight by absorption. This is quite an element of profit to the shippers.

Oranges in Florida. — The Florida orange-growers are gathering their crop, which is a good one.

Destruction of Orange-Trees. — The orange-trees in Florida were greatly injured by the frost last year; and now we learn that over ten thousand dollars' worth of orange-trees have been destroyed in Santa-Barbara County, Cal., by recent fires.

Cypripedia. — I have a letter from a gentleman in Canada, who lives in a region where five of our indigenous species of Cypripedia are found in abundance (all but *C. candidum*), and who has studied their habits and peculiarities closely, collecting every year hundreds of the plants for distant friends and for his own private garden cultivation; and from his letter I copy the following extract, thinking it may prove interesting to those of your readers who feel any concern about the Cypripedium family: —

"It is curious that I have never found one specimen of Cypripedium, of any species, on dry ground, except *C. arietinum*. *C. acaule* grows on hummocks in swamps; *C. spectabile* always grows in wet moss or muck, where water always stands; and *C. pubescens* and *C. parviflorum* grow either amongst tamarack or cedar. I have no doubt that they are distinct. I can tell them apart by their buds. *C. pubescens* has large roundish *pubescent* buds; while *C. parviflorum* has small pointed buds without any sign of pubescence or down." *G. B. W., Jun.*

Troy, N.Y.

"THE FRUITS AND FRUIT-TREES OF AMERICA," by A. J. DOWNING. Second revision and correction, by CHARLES DOWNING.

We well remember the eagerness, when it was understood that A. J. Downing was preparing a work on fruits, with which its publication was looked forward to. Its appearance was a noted event in the pomological world; and the book at once took the place, which, notwithstanding the publication of other treatises, each possessing their special excellences, it has ever since maintained, — of the standard authority on fruits. The appearance of the stout octavo into which the work has expanded in the quarter of a century that has elapsed since the publication of the first edition, we think, may well constitute another pomological epoch. We cannot but admire the courage which addresses itself to the gigantic task of preparing any thing like a complete view of the fruits of America; and we cannot but think, that, had it not been for the desire to erect a worthy monument to his lamented brother, Mr. Downing would hardly have undertaken it.

A comparison of a few points in the first and last editions of this work will show the advance which has been made since 1845, when the first edition was published. The duodecimo of six hundred pages has grown to an octavo of eleven hundred pages, of which the index occupies nearly a hundred: and, instead of less than two hundred varieties of apples, we have eighteen hundred and forty kinds described, including thirty-seven Siberian crabs and apples, the cultivation of which has sprung into importance within a few years, with a select list of ninety-seven kinds; the whole filling three hundred and fifty pages, — sufficient alone to make a respectable work. The pears have increased from two hundred and thirty to a thousand, with a select list of seventy-three; cherries, from seventy-seven to a hundred and ninety-two; peaches, from seventy-nine to two hundred and twenty-nine; plums, from ninety-seven to two hundred and eighty-seven; apricots, from sixteen to forty-five; currants, from ten to twenty-seven; nectarines, from eighteen to thirty-one; raspberries, from fourteen to eighty-seven; strawberries, from thirty-six to two hundred and fifty-two; foreign grapes, from thirty-five to forty-two; while native grapes, the improvement of which may indeed be said to have commenced within the last fifteen years, have increased from twelve to a hundred and forty-five varieties. Of native gooseberries, which have almost entirely taken the place of the English, we have six kinds, not one of which was known to the first edition: and of blackberries, which were then unknown as a cultivated fruit, we have twenty-five kinds against the two wild species described in 1845; and this notwithstanding many of the old, superseded varieties of the first edition have been dropped. The whole number of varieties described in the first edition was a little over nine hundred; in the present, more than four thousand and three hundred. In 1845, Mr. Downing gave a list of thirty-five persons who had assisted him in the preparation of his work: in this revision, his brother acknowledges the aid of more than two hundred.

A comparison of the first revision of 1857 with the editions of 1845 and the present shows that this advance in pomology has been much more rapid in the last twelve years than in the twelve preceding: so that we may well ask, What

will be the task of the pomologist who in the next twelve or twenty-five years shall attempt to do for the fruit-growers of that day what Mr. Downing has done for those of our own? But we hope that no one will attempt it: for the science of pomology, if it is not now too wide to be comprised in a single volume, certainly will be then; and authors must be content to take up a single branch as a specialty, as Field and Quinn have done with the pear, Warder with the apple, Fuller with the small fruits, and Husmann, Mead, Strong, and others, with the grape.

Yet we by no means regret the appearance of a single comprehensive volume like the present; and to say that the work is done by Charles Downing, who might justly have claimed to be not merely the reviser, but the author (though, with characteristic modesty, he prefers to lay his laurels on his brother's grave), is to say that it is done by one certainly as well qualified as any other of the few pomologists who might without presumption have undertaken it, and done with conscientious accuracy. That there should be no errors in it, is simply impossible; and no one is more conscious of this, or more desirous to have them corrected, than Mr. Downing: and, in glancing over the book, we notice, that, among the pears, Esperine and Beurré Sprin (which are identical) are quoted as synonymes of Ah Mon Dieu, though entirely distinct from it. Esperine is also correctly described; but the synonyme Beurré Sprin is not given. Hampden's Bergamot, received from the London Horticultural Society, proved quite distinct from Belle et Bonne, with which it is here made identical. Collins and Malconnaitre, which are brought together, are quite distinct; while Crawford and Lammas are identical. And, oh! Mr. Downing, how could you make Endicott a synonyme of Summer Bon Chrétien? We know that Stuyvesant is — not Stuyversant, though we were born in Yankee land, and this is a New-York book — but it does not follow, that, because Governor Stuyvesant planted a Summer Bon Chrétien, Governor Endicott did. To be sure, he may have planted one; but it has not come down to us, and the tree which has is entirely distinct. If we recollect rightly, the Borden's Early Apple proved identical with the Early Red Margaret; and we are quite sure that the Cann Apple and Seaver Sweet are one. We find no mention of the Allen's Hybrid among the grapes. But we forbear: for the task of pointing out these errors, though necessary, is not a grateful one; and we understand too well the difficulties mentioned in the preface, which make perfect accuracy in such a book impossible.

The arrangement adopted throughout the work is the simple alphabetical one, which we think best adapted to a book which must be so largely used for reference; but, in removing the blackberries from the raspberries to complete this arrangement, they should have had a chapter to themselves, instead of being placed under the barberries. We regret that Mr. Downing has omitted the names, given in former editions, of authors who had previously published descriptions of fruits; for one of the most important uses of a work of this encyclopedic character, where the descriptions are necessarily brief, is to point out to the reader where fuller information can be obtained. These brief descriptions, however, are well condensed; and as much information as possible is given in a few words, and of the more important varieties full accounts are given. We think

that the process of weeding out superseded varieties might profitably have been carried farther; for such pears as Angelique de Bordeaux, Copia, Aurate, Ambrette or Echasserie, Ambrosia, Famenga, Foster's St. Michael, Frangipane Grumkower, Hunt's Connecticut, the Blanquets, Locke, Louise Bonne (the old), Martin Sec, Michaux, Moccas, Orange d'Hiver, Pitt's Marie Louise, Sylvange, Salviati, Sanguinole, Yat, and many others, which exist only in books, where their history is amply recorded, should no longer be suffered to cumber a modern work. We regret to see the book disfigured in so many places, especially in the names of fruit, by errors of orthography, of which we have given one instance above, and by other mistakes, which are not very creditable to the proof-reader.

We have said nothing yet of those parts of the work which treat of cultivation, etc.; for they are not materially changed: but directions for cordon training and orchard-house culture, which have been invented since the first edition, have been added to bring it up to our time; and we notice, occasionally, shorter notes, showing a practical hand and sagacious eye. We are glad to see that the original dedication of the volume by A. J. Downing to his friend Mr. Wilder, then President of the Massachusetts Horticultural Society, is retained.

But, as we have said, the greatest value of such comprehensive, encyclopedic works must be for reference. We have tried this to some extent in this way, and it stands the test, in spite of occasional errors: and we can only say, that, if there is a man who can make a better book of this character than Mr. Downing, we hope he will do it; if there is one who thinks he can, let him try.

The publication of this volume reminds us of visions we have had of a work on fruits which should include the names and synonymes of all known varieties, with concise tabular descriptions, after the manner of the London Horticultural Society's catalogue, but with the addition of references to all important authorities by which they are described. We know not whether it would be possible to complete such a work, which would require the united efforts of all our first pomologists, or whether, if possible, it would be of sufficient value to compensate for the immense amount of labor it would require; but we fear that life is too short for it, and we believe that "The Fruits and Fruit-Trees of America" is as near an approach to it as we shall ever see.

The Eumelan Grape. — We have received specimens of this new variety from Messrs. Hasbrouck & Bushnell. It sustains its reputation of last year; having a high, sprightly flavor, and being free from pulp. As regards quality, it deserves to be placed at the head of the black grapes. Its only fault is its large seeds. It is to be hoped that the clusters will improve in size, as they must to correspond with the engraving sent out. We were desirous to publish an illustration of this variety both last year and this, but were unsuccessful in our efforts to procure a specimen for that purpose.

Hardy Fruits. —Varieties which put out their flowers and foliage late, like the Northern Spy and Hubbardston Nonesuch apples, and Paradise d'Automne pears, are particularly desirable for localities subject to late spring frosts.

Dr. Houghton on Pear-Growing. — A most extraordinary paper was lately read before the Pennsylvania Horticultural Society by Dr. J. S. Houghton of Philadelphia, giving the results of "ten years' experience in pear-culture." Whatever the merits or faults of this paper, it certainly contains some statements which will be new to many pear-growers, who, like the writer, can claim an experience dating back for thirty years. The substance of Dr. Houghton's communication is a dolorous wail over the failure of pear-growing. Though apparently hardy, the pear, he says, is a most uncertain fruit; and "on standard trees, even in their best condition, scarcely one-half the crop is marketable at a dollar per bushel." Now, in regard to this most extraordinary statement, we must say, that either the doctor has been more successful in producing poor fruit than any other man we ever heard of, or else the market in which he disposes of his fruit is the poorest in the country; and, if we had labored for ten years at growing pears with this pitiful result, we would never mention pears again.

But again: "Not over a quarter part of any crop is suited for first-class stores." "The finest pear-orchards in the United States, including the best gardens near Boston, and the specimen-grounds at Rochester, N.Y., cannot produce more than twenty-five dozen specimen-pears of one variety, except Bartlett and Seckel, without stripping the crop of all its good fruit, and reducing the balance below first quality. Twelve or fifteen dozen pears of one variety, sent from one garden to a leading fruit-dealer in New York, has annually exhausted the most celebrated orchard in America to such an extent, that the proprietor could not show half a peck more of respectable fruit to anybody." Dr. Houghton does not give the name of the proprietor of this orchard; and we certainly do not wonder that he does not wish to be exposed; and we are utterly unable to make a guess as to who he is.

However, it is a comfort, though a poor one, to know that the rest of the world is no better off than we are. We can raise the finest specimens only on walls: and so it is in England and France, and even in Belgium and the Channel Islands; which last two places have heretofore been supposed to be peculiarly favored in their adaptation to the pear.

Now, what shall we take as the standard of quality in a crop of pears? It is very plain that we may select the best three hundred or the best one hundred specimens of the crop of any given kind; and it is very plain that the remainder will not be as good, that is, not as large and handsome, though they may be equally fine flavored. So we might take the best twelve or the best one; and the balance would, of course, be inferior to it, as we should know without being told: but to conclude, as Dr. Houghton seems to, that they would be absolutely worthless, and that pear-growing is a failure, appears to us slightly absurd, to say the least. That all pears should be equally good, and as good as the finest grown (as Dr. Houghton seems to expect), is what never happened to any crop of any kind of fruit, or any thing else, — certainly not since Adam left Eden, and perhaps not before.

We know there are fruit-stores, "first-class fruit-stores," which deal only in selected specimens. But if the quantity of such is limited, so also is the number of purchasers who can afford to pay from three to six dollars per dozen for

them ; and though Dr. Houghton thinks it will pay to obtain fine dessert-pears by the aid of the protection of walls, coping, &c., we must differ from him, and think he would soon find the demand for such ones supplied, even though they could be afforded at considerably less rates than we have named above. We do not care how high the standard of fruit is kept up, though we would not be unreasonable : but what is now wanted in our markets is, not so much choice specimens of wall-fruit as fruit for the million, — good pears, such as can be grown on standards, and sold by the bushel at prices within the reach of every one ; just as fine flavored as if the pears were as big as your head, and vastly more convenient. The fact is, that the use of the fine pears which Dr. Houghton mentions as growing in Jersey, and sold in Covent Garden, is as much confined to the aristocracy of England as are pineapples raised under glass at a guinea apiece. Does any one suppose that the masses of the English people ever touch a fine pear or peach from one year's end to another ? The enjoyment of fruit, from strawberries to pineapples, in England, is as different from what has come to pass under our republican institutions as can be ; and we have no desire to see the latter exchanged for the former, as appears to be Dr. Houghton's aim : nor do we think there is much danger of it ; for we doubt whether, if all the gardeners in the United States who are competent to pinch and train trees on walls were brought together, there would be enough to keep in order the twenty thousand dwarf trees which Dr. Houghton has in his orchard ; or, if they did succeed in doing it for a few years while the trees were young, they would soon grow beyond the gardeners. It may safely be set down as a rule in this country, that, in nine cases out of ten, whatever a man does in the way of elaborate pruning and training must be done with his own hands, and not with hired hands, the exceptions being just enough to prove the rule. On the contrary, we know that continuous crops of as good pears as ever were eaten have been gathered from standards, and have found a ready sale at remunerative prices. In the early history of pear-culture, the European methods were imitated by those who could afford to, and brick walls were built, and trees trained on them. Some of the walls remain ; but the trees have disappeared, and have not been replanted, Why ? For the simple and excellent reason, that it was discovered that good pears could be grown without training on walls ; and we should as soon expect to see the aristocracy of pre-Revolutionary times back again as to see training on walls generally re-introduced. On this point, the following paragraph from " The Fruits and Fruit-Trees of America " is as true now as when A. J. Downing wrote it twenty-five years ago : " Training fruit-trees is, thanks to our favorable climate, a proceeding entirely unnecessary in the greater part of the United States. Our fine dry summers, with the great abundance of strong light and sun, are sufficient to ripen fully the fruits of temperate climates ; so that the whole art of training, at once the trial and triumph of skill with the English fruit-gardeners, is quite dispensed with."

To return to Dr. Houghton : " The exhibition of plates of selected fruit at horticultural exhibitions, when looked upon as *samples* of the entire crop, is, literally speaking, a gross deception." True, O king ! but not absolutely new. In these parts, people have been long enough schooled in horticultural exhibi-

tions to understand that every man brings in his best specimens ; and so nobody is deceived. What would the doctor have ? If average specimens were required, everybody might not agree with the grower as to what were average specimens of his crop ; but if every one selects the best, or what he thinks the best, every one is so far on an equality. We have known people to remark, that "they have a good deal better ones left at home ;" but the rejoinder is apt to be, "Why didn't you bring them," and there the conversation generally ends.

Dr. Houghton informs us that "such things as old standard pear-trees, pruned or unpruned, growing in grass-covered fields, producing large crops of fine fruit fitted for exhibition-purposes, even Boston has not seen ;" and he also informs us, that, even in France, "men cannot gather grapes of thorns, nor figs of thistles ;" and one piece of information is about as novel as the other. We do not, however, object to a statement, that it has been made before; but we do object to having truisms put forth oracularly as new discoveries.

It seems, however, that there once was a man in Philadelphia who could raise good pears, if there is none now, — the late Isaac P. Baxter ; but we are surprised to hear that his pears were "pow-wowed" and "magnetized." We don't know what these operations are ; but we are afraid they are rather questionable ; and we should never have suspected Father Baxter, whom we remember as a most amiable old gentleman, of any thing of that kind. At any rate, we are quite sure they have never been practised on pear-trees in Boston, or even in Salem, where some good pears have been raised, though they had queer doings there in old times.

We should be doing injustice to Dr. Houghton if we did not state that his paper contains many excellent ideas forcibly stated ; but we object to his pushing his conclusions to such extremes. It is no doubt true that pear-trees succeed best in sheltered city gardens ; or, as Dr. Van Mons well expresses it in a letter which we cannot lay our hands on at this moment, though we think we have his exact words, "the pear-tree is a tree of society, and pleads to live in town : " but when told, that if Mr. Baxter's trees had been planted six miles out of the city in similar soil, with even better culture, the fruit would have been cracked, spotted with fungus, and disfigured by the attacks of insects to such a degree as to be unfit for sale, or even for eating, — why, we must dissent. This might have proved true of a few kinds, but not of the majority ; and the lesson to be learned is, not to plant those kinds in the open ground. The others might not produce as fair fruit as in the city ; but, if not "best," there is no reason why it should not be "very good" in appearance, as well as of first quality for eating.

So, too, when he says, "that, to obtain the finest fruit, we must look to the constant production of new wood and new fruit-spurs ; I feel assured that the best fruit cannot be produced upon very old, long, slender shoots, and old stunted fruit-spurs ; the fruiting-wood and fruit-spurs should not be more than four to six years old," — his ideas are excellent, and excellently put, and worthy of perpetual remembrance by all pear-growers. But for everybody to keep their wood in just that condition is simply impossible : it is impossible for the great body of cultivators. But do not jump to the conclusion, that they will not raise an eatable pear. The superiority of the fruit from grafts, to which Dr. Houghton

more than once alludes, is due to the youth and vigor of the wood, and not to the fact that they were "double-worked."

It is true that Dr. Houghton does admit in one paragraph that "the pear may be cultivated on a large scale in the open field or garden, and that large quantities of good fruit may be produced on standard trees in open orchards;" but the whole tone of his paper is opposed to this view, and one passage quoted above is entirely irreconcilable with it. We refer to the place where he speaks of the effect of removing trees from a city garden to one only six miles away.

Dr. Houghton alludes to a system of improper pruning and management which he has practised in the past; but he believes he is right now, and apparently deems himself just on the eve of success. We hope he may not be disappointed: we hope his trees will not serve him such a shabby trick as the old horse did his master, who had with infinite pains taught him to live without eating, by dying just as the lesson was learned. It would be a pity for the doctor's trees to die just as he is on the point of discovering the secret of how to grow a crop of pears with none but large and perfect specimens; but we should not be surprised if his dwarfs at least were ungrateful enough to do just such a mean thing.

But we have had enough of combating these arguments: and perhaps it is hardly worth while for us to say any thing at all; for our good friend the accomplished editor of "The Gardener's Monthly," in which this extraordinary article is published, informs us in advance that the paper is worth more than any objection that the most critical may make against it; and also remarks, that the knowledge and skill which have directed pear-culture to this day are merely empirical, having no foundation in science, and no success in practice, to recommend them; and that we have the whole subject to begin anew, and the hard lesson to learn over again. He does not even give us the poor credit of having learned any thing by failure.

Now, we confess it was news to us to learn that we had been cultivating pears, some of us for a quarter of a century, some more and some less, and learned absolutely nothing. We thought there were at least a few men who knew something about it; and we think so still.

Utilizing Weeds. — The almost universal practice of removing weeds from the garden is certainly wrong. It is poor economy to allow their growth in the first place; but to collect them on some barren, unoccupied spot, or perhaps consign them to the street to be dried and wasted, is impoverishing in the extreme. Properly managed, so far from exhausting the soil, they make one of the best of fertilizers. Immediately after hoeing, rake all together, and bury them as compactly as possibly five or six inches below the surface of the ground. Thus treated, not only are all the benefits derived from green-soiling secured, but, in the fermentation which will follow, the vitality of the seeds contained will generally be destroyed. Experience has proved the great utility of such a course; and those who may adopt it will find the old and seemingly paradoxical proverb verified, "There is that tendeth to poverty, and yet maketh rich."

Fair of the Lake-Shore Grape-Growers' Association. — The first Annual Fair of the Lake-shore Grape-Growers' Association as re-organized, was held on Friday and Saturday, Oct. 15 and 16, at the Court House in Erie, Penn. The display of grapes and flowers was fine, and was much better than was anticipated in view of the unfavorable character of the season for grapes on the Lake Shore. There was a fair attendance upon the meetings and discussions of the association. Nearly a hundred and fifty entries of grapes were made, and the number of plates exhibited on the tables was about two hundred. The samples were from different localities, — from the Hudson River on the east, and Hamilton, Canada, on the north, to and including the Lake Shore. Perfect specimens of the Eumelan, the Walter, and the Croton (the latter Mr. S. W. Underhill's new white seedling, a cross between the Delaware and Chasselas), were exhibited, and were much admired. Wines from Mr. E. A. Thompson of Cincinnati were on the tables, and his sample of Norton's Virginia was especially admired for its excellence; while the South-shore Wine Company of North East, Ryckman, Day, & Co., of Brocton, and several smaller manufacturers, showed fine samples of their different brands of red, white, and sparkling wines.

Among the distinguished visitors to the fair were Charles Downing of Newburgh, F. R. Elliott of Cleveland, Secretary of the United-States Pomological Society, and M. B. Bateham of Ohio.

On the evening of Friday, William Griffith, Esq., President of the Association, delivered an address. He referred to the different systems of pruning the vine, and deprecated the method of summer-pruning which had been so generally practised, but was now growing into disfavor. He alluded also to the oïdium, or mildew, and other diseases of the vine, which had proved to be more or less disastrous during latter years in Ohio; and made copious extracts from different writers on the subject. The climatic and atmospheric conditions and the character of the soils on the Lake Shore were stated at length. The efforts of gentlemen who have sought to produce new and valuable varieties by raising new seedlings, either by chance results or by hybridizing, were especially commended; and, finally, wine-making was spoken of as a branch of industry which must be fostered and encouraged if the permanent interests of grape-cultivation were to be regarded.

He was followed by Mr. E. F. Underhill, the secretary, who described the system of wide planting and high training and pruning practised at Naples Valley, N.Y. [The system was fully described in an article, by Mr. Underhill, in the November number of the Journal.]

Mr. F. R. Elliott of Cleveland briefly addressed the association. He alluded to the remarkable success which this year had attended grape-culture in New England in contrast with our own success on the Lake Shore; and stated, that, on the Lake, they must not plume themselves too much upon tl eir supposed advantages for grape-growing, for there were many, very many situations where the vine could be grown with eminent success and profit.

Mr. M. B. Bateham of Ohio also addressed the association.

During the second day, the discussions were resumed.

Mr. A. S. Moss of Fredonia, N.Y., referred to the progress which had been

made in the methods of pruning and training the vine, and remarked how little had been learned during many years' experience, as was evidenced by the startling facts which were being adduced counter to their previous ideas and practices in treating the vine.

Mr. John E. Mottier of North East was opposed to the system of wide planting and high training advocated by Mr. Underhill, in view of the latter's observations at Naples Valley; Mr. Mottier holding that the quality of the grapes deteriorated for wine-purposes under such treatment. He admitted, however, that, in vineyard-planting, he had commenced by putting his vines in the ground at a distance of three feet by eight; but that he had found it better, as the result of experience, to increase the distance to six feet by eight.

The awards were announced as follows: —

CLASS I. — Standard Red and White Grapes: —

Catawba. — 1st. To Ryckman, Day, & Co., of Brocton, N.Y., for sample grown at Naples, N.Y.; 2d. L. Spencer, North East, Penn.

Diana. — 1st. Ryckman, Day, & Co.; 2d. Calvin Leet of Moreheadville, Penn.

Delaware. — 1st. A. J. Byington, Naples, N.Y.; 2d. C. H. Mottier, North East, Penn.

Iona. — 1st. W. & S. Griffith, North East, Penn.; 2d. Ryckman, Day, & Co.

Rebecca. — 1st. South-shore Wine Company, North East, Penn.; 2d. W. & S. Griffith.

CLASS II. — Standard Black Grapes: —

Isabella. — 1st. Ryckman, Day. & Co.; 2d. W. & S. Griffith.

Clinton. — 1st. William Haskins, Hamilton, Province of Ontario; 2d. South-shore Wine Company.

Concord. — 1st. South-shore Wine Company; 2d. H. Janes, Erie, Penn.

Hartford. — 1st. W. & S. Griffith; 2d. M. Mehl, Erie, Penn.

Ives. — 1st. C. H. Mottier; 2d. W. & S. Griffith.

Norton's Virginia. — 1st. W. & S. Griffith; 2d. C. H. Mottier.

Creveling and *Franklin.* — 1st. W. & S. Griffith.

CLASS III. — Newer Varieties of Grapes: —

Goethe (Rogers's No. 1). — 1st. W. & S. Griffith; 2d. I. H. Babcock, Lockport, N.Y.

Massasoit (Rogers's No. 3). — 1st. W. & S. Griffith; 2d. A. S. Moss, Fredonia, N.Y.

Wilder (Rogers's No. 4). — 1st. I. H. Babcock; 2d. C. H. Mottier.

Agawam (Rogers's No. 15). — 1st. W. & S. Griffith; 2d. A. S. Moss.

Merrimack (Rogers's No. 19). — 1st. A. S. Moss; 2d. W. & S. Griffith.

Rogers's No. 33. — 1st. A. S. Moss.

Salem. — 1st. I. H. Babcock; 2d. W. & S. Griffith.

Israella. — 1st. W. & S. Griffith; 2d. C. H. Mottier.

Walter. — 1st. Ferris & Caywood, Poughkeepsie, N.Y.; 2d. Ryckman, Day, & Co.

Eumelan. — 1st. Hasbrouck & Bushnell, Iona Island, N.Y.

Lydia. — 1st. W. & S. Griffith.

Mottled. — 1st. C. H. Mottier.

Class IV.: —

Best red grape for the table, — the Delaware; Ryckman, Day, & Co.

Best black grape for the table, — the Eumelan; Hasbrouck & Bushnell.

Best white grape for the table, — the Rebecca; William Haskins.

Best red grape for wine, — the Iona; Ryckman, Day, & Co.

Best black grape for wine, — the Ives Seedling; C. H. Mottier.

Best new red seedling, — the Walter; Ferris & Caywood.

Best new black seedling, — the Eumelan; Hasbrouck & Bushnell.

Best new white seedling, — the Croton; Stephen W. Underhill, Croton Point, N.Y.

Class V. — Fruit on Cane: —

Best display of Isabellas on cane; C. Sexauer, Erie, Penn.

Best display of Delawares on cane; C. Leet, Moreheadville, Penn.

Fine display of Walters on cane; Ferris and Caywood.

Class VI. — Dry White Wines: —

Isabella. — 1st. South-shore Wine Company; 2d. Ryckman, Day, & Co.

Catawba. — 1st. South-shore Wine Company; 2d. Ryckman, Day, & Co.

Delaware. — 1st. South-shore Wine Company; 2d. Ryckman, Day, & Co.

Diana. — 1st. Ryckman, Day, & Co. [The committee in their report speak of this sample of wine as entitled to special mention for its excellence.]

Hartford Prolific. — 1st. South-shore Wine Company.

Concord. — 1st. E. A. Thompson, Cincinnati, O.

Iona. — 1st. South-shore Wine Company; 2d. Ryckman, Day, & Co.

Class VII. — Dry Red Wines: —

Ives Seedling. — 1st. South-shore Wine Company; 2d. E. A. Thompson, Cincinnati, O.

Clinton. — 1st. Ryckman, Day, & Co.; 2d. South-shore Wine Company.

Concord. — 1st. South-shore Wine Company.

Oporto ("Erie-County Port"). — 1st. W. King, Erie, Penn.

Class VIII. — Sparkling Wines: —

Catawba. — 1st and 2d. South-shore Wine Company.

Isabella. — 1st. Ryckman, Day, & Co.

From Mixed Grapes. — 1st. Ryckman, Day, & Co., for the "Diamond Wedding."

Class IX. — Non-enumerated Articles: —

Grape-Boxes. — Manton & Noble, Fredonia, N.Y.

The Vine-Lock. — A substitute for tying in attaching the vines to the trellis-wire. A special diploma to E. F. Underhill, Brocton, N.Y.

Twitchell's Acidometer. — A special diploma awarded to Mr. Twitchell of Cincinnati. This instrument is designed to test the amount of acids in liquids. It is simple in its construction and operation, and shows upon a graduated scale the number of parts in a thousand of acid. The action depends upon the neutralization of the acid by the use of a given quantity of bi-carbonate of soda, by which a definite volume of carbonic-acid gas is given off for every equivalent of acid. This displaces a corresponding portion of water in a

receiver ; which portion is forced to rise in the graduated tube, where the result can be read.

CLASS X. — Flowers : —

Special diplomas to Mrs. Wilson King of Erie, Penn., for a fine display of greenhouse flowers and plants ; and to Miss Denton of Fredonia, N.Y., Mrs. W. W. Dinsmore of Erie, Penn., and Miss Mottier of North East, for beautiful displays of annuals and bouquets.

During the concluding portion of the proceedings of the fair, Hon. John P. Vincent of Erie addressed the association. He stated, that, in the judicial position which he held, he was constantly brought in contact with crime ; and that, as the result of extended observation, he believed that much the greater part of crime could be traced to the use of intoxicating drinks. There seemed to be, from whatever cause, an untoward tendency to indulgence in alcoholic drinks by many of our people ; and all attempts to check that tendency had proved unavailing. In this view, the question was important, whether it was not possible to direct the indulgence of appetite into a different channel ; to divert it from the fiery distillations at present in use to the light wines made from the pure juice of the grape, which would produce the exhilaration sought by those who indulged, and yet was quite unlikely to cause drunkenness and its attendant evils. He believed that the extensive use of wines such as had been exhibited at the fair, wholesome, pure, and generous, would do much to banish the curse of intemperance ; and hence he regarded the growth of the grape, and the manufacture of cheap, pure, American wines, as branches of industry which should be fostered in every locality where they could be successfully carried on. *L.*

THE AMALIA APPLE. — This new variety is described in "Hearth and Home" as one of the most beautiful of apples, and giving promise of great excellence. It bore at the remarkably early age of five years. It was raised by Mrs. Siedhof of Weehawken, N.J., and bears her name.

"Fruit large, roundish, inclining to conic ; skin very smooth and shining, deep yellow, with small spots and blotches of reddish orange ; calyx set in a narrow, deep, and irregular basin ; stalk rather slender, about an inch long, inserted in a deep, funnel-like cavity ; flesh yellowish-white, tender, with a crisp, sub-acid flavor. Season, September and October. Judging from this single specimen, we consider the Amalia a very promising variety."

KANSAS FRUIT. — The Kansas people are justly proud of the beautiful exhibition of fruit made from their State at the meeting of the Pomological Society; and "The Kansas Farmer" gives a fine engraving of the pomological pyramid on which they were displayed.

Noticing a short time ago a remarkably fine dish of yellow Bellflower apples at an exhibition of the Massachusetts Horticultural Society, the exclamation which instinctively came to our lips was, "Equal to Kansas!" It seems strange that this young State should furnish a standard of excellence for our apples ; but so it is.

The Annual Exhibition of the Ohio Grape-Growers' Association was held in Cleveland, Oct. 13. The display of fruit was much better than was expected after so unfavorable a season; the number of entries being over a hundred, embracing about three hundred plates of forty different varieties, nearly all of fine appearance and quality.

In the evening discussions, depth of planting was the first subject introduced. It was found that the fruit ripened better when the roots were near the surface: but the difficulty of using the plough or cultivator, and the danger of winter-killing when planted shallow, were objected to; and it was thought that the majority were in favor of shallow planting, and ridging up the ground in autumn, to prevent injury by the winter. Mr. Caywood said that deep planting caused the "mushroom" disease, — a white fungus under the outer bark of the stem of the vine both above and below ground, causing lasting injury to the vine; while Mr. Campbell said this fungus was often seen where not attributable to deep planting, and he did not think that it damaged the vines much, if any, except while quite young.

The discussion of varieties was commenced by Mr. Bateham, who remarked that Rogers's Hybrids had mildewed badly with him the present season. He had also seen them at Mr. Knox's, near Pittsburg, destitute of leaves. He was apprehensive that their foreign blood rendered them too liable to mildew. Mr. Babcock of Lockport, N.Y., would not judge any variety by its behavior this year. He had seen Salem, Wilder, and others of Rogers's, succeeding the present season where Delaware and Iona failed. Mr. Campbell had been much pleased with Rogers's grapes; but this year his expectations had been disappointed: but he still hoped this would prove an exceptional season. Mr. Caywood had seen Salem and Agawam doing well this year. Mr. S. B. Marshall had a fair crop of Wilder and Merrimack on dry, gravelly soil: he had also seen Agawam doing well; best on dry soils, and not pruned too closely.

Mr. Bateham inquired whether any one had tested sulphur as a remedy for mildew this season, and read a letter from W. J. Flagg of Freestone, Sciota County, O., suggesting as reasons why sulphur might have failed in some cases, that, 1st, The applications may not have been timely or sufficiently frequent. They should be made either immediately upon the appearance of the disease, or before it has been able to work serious damage; or, if such appearance cannot be early enough detected, then there should be a sulphuring every twenty days, beginning as early as any mildew has ever been observed to show itself on the particular vines to be treated, and continued till the grapes begin to change color. However much sulphur one may blow upon his vines, if he allows the fungus to get the start of him by a few days, there will be a failure of the experiment.

2d, The sulphuring may have been carelessly done; or, being well done, rains may have washed off the powder before it had time to work its proper effect.

3d, After properly dosing his plants, the vine-dresser may have been frightened by the appearance of black rot (which sulphur will not cure), and confounding that with the fungus disease, for which alone sulphur is prescribed, abandoned the remedy in despair. That is not the malady that some call the

oïdium, which, however named, is, I insist, perfectly curable with sulphur: if we can control it, the black rot will scarcely hinder our progress. And yet, with certain varieties, on low lands, on compact and undrained grounds, badly aired and subject to fogs, the black rot alone, in a very wet season, may nearly destroy the entire crop. I ask a fair trial of the remedy.

The Adirondack was pronounced by Capt. Spaulding feeble and unproductive; and Israella as a fair grower, very productive, and of good quality.

The Iona was considered one of the best and most profitable grapes, being earlier than Catawba. It is, however, apt to overbear, and, as well as the Catawba and Delaware, should be thinned. Mr. McMahon of Cleveland, who had a fine display of Ionas and Delawares, regarded the Iona as almost if not quite as early as the Delaware, and a good deal earlier than Catawba the past two years, but not as early as usual the present year; and this was the common experience.

Among the fine grapes from the Dover-Bay vineyards, Dr. Beckwith called special attention to the Franklin, of which a fine plate was exhibited. It resembles the Clinton, but is superior to it, and deemed especially promising as a wine-grape.

The First Committee — George W. Campbell, Delaware, O.; Frank Knapp, Geneva, O.; James C. Dudley, Geneva, N.Y.; D. C. Richmond, Sandusky, O.; S. Underhill, Croton Point, N.Y. — made the following awards: —

Best six bunches Catawba, — J. A. Hall, Collamer; second, George Morgan, Cleveland.

Best six bunches Delaware, — Capt. John Spaulding, Cleveland; second, Dover-Bay Company. [The committee had great difficulty in awarding this premium, as the specimens were so nearly equal, — excellent in all respects, and all worthy representatives of this fine grape.]

Best six bunches Diana, — R. P. Vorce, Euclid; second, George Morgan, Cleveland.

Best six bunches Concord, — Dover-Bay Company; second, O. D. Ford, East Cleveland.

Best six bunches Hartford Prolific, — Dover-Bay Company; second, George Morgan, Cleveland.

Best six bunches Isabella, — O. D. Ford, East Cleveland; second, George Morgan, Cleveland.

Best six bunches Ives's Seedlings, — L. Harms, Euclid; second, Dover-Bay Company.

Best six bunches Clinton, — Dover-Bay Company; second, Capt. John Spaulding, Cleveland.

Best six bunches Adirondack, — Capt. John Spaulding; second, John S. McMahon, Cleveland.

Best five bunches Iona, — Capt. John Spaulding; second, A. M. Searles, Collamer.

Best five bunches Israella, — Capt. John Spaulding; second, J. S. McMahon.

Best five bunches Creveling, — Capt. John Spaulding.

Best five bunches Salem, — H. Babcock, Lockport, N.Y.

Best five bunches Massasoit (Rogers's No. 3), — Capt. John Spaulding; second, J. S. McMahon.

Best five bunches Wilder (No. 4), — Capt. John Spaulding; second, J. S. McMahon.

Best five bunches Agawam (No. 15), — J. S. McMahon; second, T. R. Chase, Cleveland.

Best five bunches Merrimack (No. 19), — J. S. McMahon.

The Second Committee — Charles Downing, Newburgh, N.Y.; F. R. Elliott, Cleveland; M. B. Bateham, Painesville; and I. H. Babcock, Lockport, N.Y. — made the following awards: —

Best ten varieties Native Grapes, — O. D. Ford, East Cleveland, — Catawba, Delaware, Isabella, Diana, Rebecca, Concord, Iona, and Rogers's Hybrids. Wilder (No. 4,) Massasoit (No. 3), and Agawam (No. 15); no second premium. [Several other fine assortments entered for this premium were ruled out by the committee, because the same plates were entered separately for other premiums.]

Best hardy White Grape (Rebecca), — George Morgan, gardener for J. B. Perkins, Esq., Cleveland; second, O. D. Ford (Rebecca), East Cleveland. [The Croton variety, exhibited by Mr. Underhill of New York, would have received the first premium if the committee had believed there was sufficient proof of its hardiness.]

Best new Seedling Grape. — This premium was divided equally between S. Underhill of Croton Point, N.Y., for the Croton, as the best new white grape, and Hasbrouck & Bushnell of Iona Island for the Eumelan, as the best new black grape. The Senasqua, another new grape nearly black, exhibited by Mr. Underhill, was also highly commended by the committee.

Best single cane of Catawba, —Dunham & Son, Collamer.

Best single cane of Diana, — Dunham & Son, Collamer.

Best single cane of Iona, — Capt. John Spaulding, Cleveland.

Best single cane of Concord, — O. D. Ford, East Cleveland.

Best single cane of Rebecca, — O. D. Ford, East Cleveland.

Best single cane of any of Rogers's Hybrids, — T. R. Chase, Cleveland, — Agawam (No. 15).

Best single cane of any other variety, — Capt. John Spaulding, Cleveland.

The following premiums were awarded in the class of "Discretionary:" —

Best specimen of the Walter Grape, — A. J. Caywood, Poughkeepsie, N.Y.

Best specimen Norton's Virginia, — L. Harmes, Euclid.

Best specimen Detroit, — Quaker-Valley Nurseries.

Best specimen Eumelan, — Hasbrouck & Bushnell, Iona, N.Y.

Best Rogers's Hybrid No. 5, — J. S. McMahon, Cleveland.

The *new grapes* at this exhibition attracted much attention, especially the two very promising seedlings, Croton and Senasqua, presented by Mr. Underhill of New York. If the Croton vine proves sufficiently hardy and productive, it is the best of all American white grapes, and supplies a long-felt desideratum.

The Eumelan, by Hasbrouck & Bushnell (successors to Dr. Grant), was presented here for the first time, and in better condition than before seen in Ohio. It was pronounced the best new black grape.

The Walter, by Mr. Caywood, was in fine condition for this cool season, and won many friends. A branch of a vine laden with fruit gave ample proof of the productiveness of the Walter. The Modena, also by Mr. Caywood, resembles the Concord, of which it is a seedling, and is not any improvement on that variety.

The Diana Hamburg, of Mr. More of Rochester, N.Y., grown at Dover Bay, was of fine appearance, but not quite ripe; and reports of the vine are not satisfactory.

Chester Seedlings. — Specimens of several numbers of these grapes were exhibited from the garden of Joseph Perkins; but they did not seem to present any special merits, and too little is known of them as yet.

The Martha was not on the tables; though good samples were on the vines of George Leick at Collamer, he supposing that Mr. Campbell would bring better from Delaware; and Mr. Campbell, having used his best clusters for other exhibitions, supposed Mr. Leick or Mr. Knox would bring some.

It was unanimously agreed to change the time of the annual meeting from February to December; and the next meeting was appointed at Dayton, on the first Wednesday of December, — the time and place of the annual meeting of the State Horticultural Society. This change was made that an abstract of the proceedings may be published in the annual report of the Horticultural Society, and also to secure a larger attendance of members. *M. B. B.*

Fruit-Culture in Nebraska. — "The Central Union Agriculturist," published at Omaha, Neb., gives encouraging accounts of the cultivation of fruit in that State. Delaware, Catawba, Concord, and other grapes, have borne and ripened finely. The Bartlett, Belle Lucrative, Louise Bonne of Jersey, White Doyenné, Seckel, Duchess, and other pears, are bearing bountifully, and, with the over-loaded apple-trees, declare that Nebraska is the best fruit-growing State in the North-west. Prince's Imperial Gage has succeeded well, grafted on the wild plum of that region. Of apples, the Cooper's Early, White, Hawley, Hocking, Detroit Red, English Red-Streak, and a beautiful scarlet apple called the "Monarch," are highly praised. A new seedling-apple, called the "Nebraskian," is commended to all desiring hardy and valuable fruit. A fine variety of the native plum is also mentioned.

Peanuts. — A million bushels of peanuts a year are raised on the south shore of the James River, between Norfolk and Petersburg. A Norfolk man has invented an improved peanut-picker.

Frozen Apples. — Michigan lost a million dollars' worth of apples by the cold snap about the first of November. An immense quantity was also frozen in Vermont.

The Cider-Crop in New Jersey is said to be immense.

California Pears are for sale in New Orleans.

The Sublime of Impudence. —We do not think a better exemplification of impudence rising to the height of sublimity could be found than in the following anecdote of a tree-dealer, whose place of business was not a thousand miles from Boston. This person called himself a nursery-man, and had a little piece of land a few miles from the city, — just enough for him to talk about his "nursery-grounds." One day, a gentleman who wanted a good-sized Bartlett pear-tree called on Mr. ——, the tree-dealer. He found him at his "grounds," and stated his wishes to Mr. ——, who at that moment had hold of a pear-tree standing by him. "Well," said Mr. ——, "this tree that I have got hold of is a Bartlett; and I should think it is just about what you want." The customer asked the price, and Mr. —— replied that he would sell it for five dollars: it was worth more; but it had been dug up and heeled in; and, sooner than set it out again, he might have it for that price. It seemed to be a good tree, and cheap: so the gentleman took it, paid his five dollars, and carried the tree home, and set it out; and, being of good size, it was not long in coming into bearing. Its owner then put some of the fruit in his pocket, and went to see Mr. —— again.

"What kind of pears are these?" said he, showing the tree-dealer a handful. "Well, I don't know," was the reply; "but I should think they were button-pears." — "Button pears, indeed! wouldn't you think they were Bartlett pears?" "Bartlett pears! they're no more Bartlett pears than a French turnip is a Bartlett pear." — "Well, Mr. ——, at any rate, these pears grew on a tree that I bought of you for a Bartlett pear-tree." — "Are you such a d——d fool," was the rejoinder, "as to expect a tree is going to bear Bartlett pears the first year?" Of course, there was nothing to be said after that.

"The Country Gentleman" is the best of all our agricultural papers, as is shown, if other proof were wanting, by its frequent extracts from this Journal. It could not possibly pay us a higher compliment. We do not wish to be hypercritical; but we must correct one or two slight mistakes which we find in its pages, as when it says, in quoting from the Journal, that "the Clapp's Favorite Pear is pronounced by Robert Manning of Salem as undoubtedly superior to any other of its season." What Mr. Manning did say was, that, in *size* and *beauty*, it is superior to any other of its season. It is not superior in flavor to Rostiezer, Ott, or Brandywine, nor, indeed, equal to them; but its size and beauty, combined with its fine quality, more than compensate as a market-fruit.

The strawberry experience quoted was gained in Walpole, Mass., instead of Walpole, N.H.; a not unimportant distinction. And "The Country Gentleman" will be glad to know that the veteran horticulturist mentioned as "the late William Kenrick" still lives, and, though leading a retired life, is busily engaged in horticultural studies.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

LYCHNIS LAGASCÆ. — Rock-plants, which are very properly engaging more and more of the attention of cultivators, will receive a choice accession in the pretty species of which Mr. Fitch has given so good a representation in the accompanying wood-cut. It is a low, glaucous, tufted, perennial herb, with densely dichotomous stems two to four inches long, having the lower leaves linear obtuse, the upper lanceolate, and the intermediate ones ovate-lanceolate; while every ramification is terminated by a showy, rose-colored flower, as large as, and not unlike those of, *Silene pendula.*

LYCHNIS LAGASCÆ.

Dr. Hooker well observes that "this is at once one of the most beautiful and most rare of the rock-plants now under cultivation in England, its native locality being confined to a very narrow belt of the sub-alpine region of the North-west Pyrenees; whilst for beauty it is difficult to conceive any thing more sparkling, and at the same time delicate, than the rose-colored, white-eyed blossoms. The tendency of the plant is to form a hemispherical mass." The generic names of Petrocoptis and Silenopsis have been applied to it. — *M., in Florist and Pomologist.*

Select Ferns. — *Asplenium alatum.* — For filling a basket in the stove this is one of the most suitable ferns, and it makes a pleasing object on a rockery. Its brilliant green color and graceful outlines render it distinguishable amongst many. In the greenhouse it prospers during the summer, but should be in the stove during winter.

Asplenium appendiculatum. — The fronds are subtripinnate, of a fine dark-green color; a fine fern for the cool-fernery.

Asplenium auritum. — A pretty light-green stove-fern, with tapering fronds, the lowest pinnæ being distinctly eared. Admirable for a fern-case.

ASPLENIUM ALATUM.

Asplenium Belangeri. — A favorite for exhibiting, and essential to a first-class collection. The color is a rich green; the general outlines plumy; the fronds are proliferous. An evergreen stove-fern.

Asplenium bulbiferum. — Undoubtedly one of the finest of the family, and one of the best for a beginner, whether to grow for exhibition, or to treat with such neglect as ferns are subject to. The fronds grow to eighteen inches in length, and become completely covered with tiny young plants, which weigh them down with graceful arching outlines. First-rate for the cool-house and the fern-case. We have had a fine specimen in a case in the entrance-hall for nearly five years, and its healthy and luxuriant condition is unsurpassable. *A. fabianum*, *A. laxum*, *A. mertensianum*, and *A. Shuttleworthianum*, are varieties of *A. bulbiferum*.

Asplenium dimorphum, sometimes labelled "*A. biformis.*" — A grand species, often confounded with *bulbiferum*, but inexcusably so, for they are perfectly distinct. Independent of its fine arching, ample, glossy fronds, this species is interesting on account of the distinct characters of its barren and fertile fronds; the first being broad and leafy, the second finely cut with linear pinnules. Grows freely planted out in a cool-house, makes a fine specimen, and will thrive to perfection in a close case.

ASPLENIUM MYRIOPHYLLUM.

Asplenium flabellifolium. — A lovely little fern for suspended baskets, in a case, or to plant high up on a rockery, in a cool-house, or to stick into a chink in a damp wall, in the shady part of the stove.

Asplenium hemionitis, better known as *A. palmatum.* — A bold, showy fern, with broad palmate fronds, on which the sori are produced in beautiful lines. Figured in "Floral World," vol. v. (1862), p. 217. One of the best case-ferns known; also fine for the cool-house, as it is nearly hardy. There is a pretty crested variety of it.

Asplenium lucidum. — An exhibition-fern, nearly hardy, and therefore first-rate for the cool-house, and especially fine for the in-door rockery. The fronds

attain a length of four or more feet, if well grown. They are pendulous, brilliant green, and glossy. A 1 for everybody, except those who only have cases ; and to these it is useful only when young.

Asplenium myriophyllum. — A fern for the fairies, and certainly too good for any human being who ever frowned, spoke harshly, or treated a grandmother with disrespect. Its name denotes that it is like the water milfoil, finely cut, and divided into the loveliest of lace-like segments. As the fronds attain a length of nearly two feet, and are proliferous at the apex, a fine specimen affords plenty to look at. *A. rhizophyllum*, *A. dubium*, *A. strictum*, *A. bifissum*, *A. cladolepton*, are either the same specifically, or so slightly removed as to be regarded as varieties only.

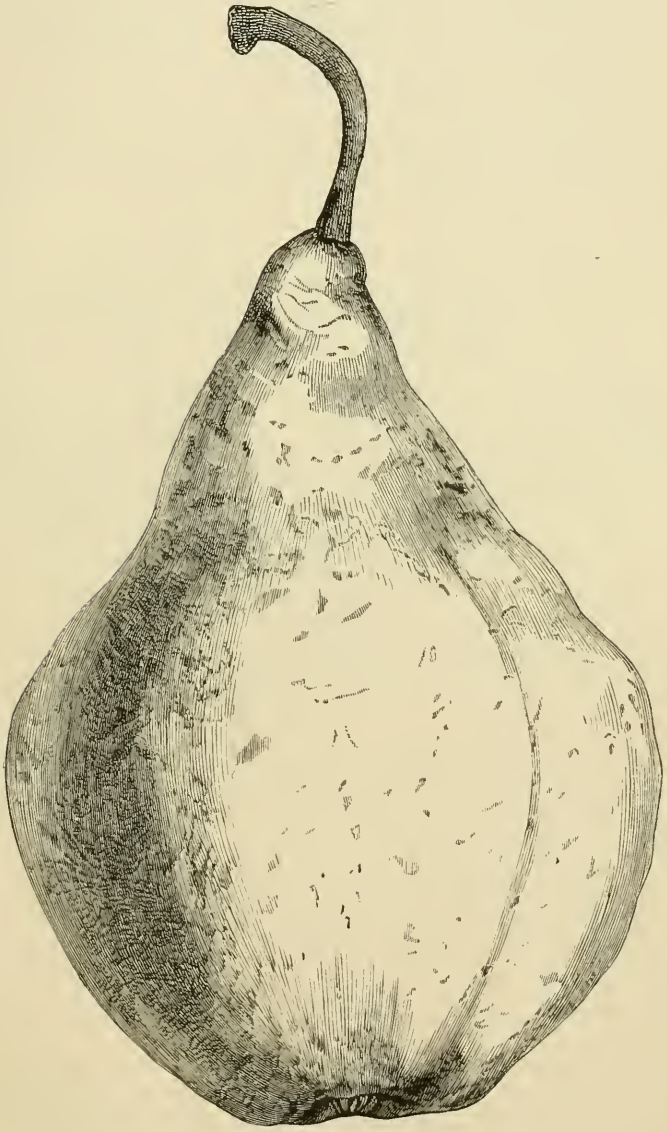
Asplenium præmorsum is a general favorite. It is a variable fern, the normal form having arched, thrice-divided, tapering, spare-looking, smooth, dark-green fronds. It forms a splendid fern for a vase, and is first-rate for exhibition. The greenhouse is the proper place for it ; but it will go through a mild winter in an unheated house if it has a little care, more particularly to guard against excess of moisture.

Asplenium rhizophorum. — A charming fern with light-green arching fronds, every one of which takes root at the point, and produces a young plant. Its object, evidently, is to cover all the world with itself by this mode of travelling : it only fails because not equal in the struggle for life to some of the circumstances which oppose its progress. A pretty fern for suspending. The proper place for it is the stove ; but Mrs. Hibberd has kept it, and multiplied it largely in her cool-cases during full ten years, and with few losses.

Asplenium viviparum. — A lovely, small-growing, bluish-green, fennel-like fern, but more sublime than fennel, as a bird of paradise is more sublime than a crow, though *both* are handsome. The upper surface is freely covered with young plants. It is one of the best possible for the front of a case, where, however, it is the first to die if any thing goes wrong with the drainage. Mrs. Hibberd tells me she would never care to keep it in a case without the aid of artificial heat in winter, as, in the event of severe weather occurring when the case happened to be slightly more damp than usual, it would be like the tree, the flower, and the "dear gazelle" of the "trembling maid" in "The Fire-Worshippers."

Asplenium serra. — The grandest of all the *aspleniums*, and adapted only for large ferneries, where it requires stove-heat. It is a first-class exhibition-fern, with rich dark-green, leafy, arching fronds, the pinnæ of which are deeply serrated. Being evergreen, it is well adapted to plant on a rockery in the stove. This completes our selection of the most distinct and useful *aspleniums*, omitting Britishers, on which enough has been said in former papers. — *S. H., in Floral World.*

THE BEURRÉ DU CERCLE PEAR. — We give an engraving from "The Florist



THE BUERRÉ DU CERCLE PEAR.

and Pomologist" of this new pear, which fruited in England last year, and

proved excellent. The specimen from which this illustration was made appears to be much finer than that outlined in Leroy's "Dictionnaire de Pomologie." The tree is described as vigorous, growing well on the quince, and forming fine pyramids, and very productive. The fruit is of a pale-yellow color, partly covered with a bronze tint, sprinkled with grayish white, and sometimes colored with delicate rose; juice abundant, acidulous, sugary, with a buttery taste of the most delicate character. Ripe the last of September and beginning of October. This variety was raised by M. Boisbunel, the nursery-man at Rouen, from seed sown in 1845, and first fruited in 1856. The synonyme quoted in the "Fruits and Fruit-Trees of America" is improperly divided: it should be "Beurré du Cercle Pratique de Rouen." This name was given by the originator in acknowledgment of the kindness with which his pomological essays had been received by the "Cercle Pratique d'Horticulture et de Botanique de la Seine Inférieure," in whose bulletin it was described in 1857; but, being inconveniently long, the name has been abridged to Beurré du Cercle.

Preserving Apples, Pears, &c. — Next in importance to growing our hardy fruits may be ranked the preservation of them for winter use, whether by amateurs or professional gardeners. In the month of February last, a few prizes offered at one of the Tuesday meetings at South Kensington brought together a considerable quantity of apples and pears from various exhibiters; and this fruit was in so excellent a state of preservation, that the mode of keeping in the different cases was inquired into. The following is a *précis*, published by the Royal Horticultural Society, of the communications received: —

1. As the flavor of fruit is so easily affected by heterogeneous odors, it is highly desirable that the apple and pear rooms should be distinct.

2. The walls and the floor should be annually washed with a solution of quicklime, to which common salt is sometimes added. [Salt is objectionable.]

3. The room should be perfectly dry, kept at as uniform a temperature as practicable, and be well ventilated; but there should not be a thorough draft.

4. The utmost care should be taken in gathering the fruit, which should be handled as little as possible.

5. For present use, the fruit should be well ripened; but if for long keeping, it is better, especially with pears, that it should not have arrived at complete maturity. This point, however, requires considerable judgment.

6. No imperfect fruit should be stored with that which is sound, and every more or less decayed specimen should be immediately removed.

7. If placed on shelves, the fruit should not lie more than two deep; and no straw should be used.

8. Where especially clear and beautiful specimens are wanted, they may be packed carefully in *dry* bran, or in layers of *perfectly dry* cotton-wool, either in closed boxes or in large garden-pots. Scentless saw-dust will answer the same purpose; but pine saw-dust is apt to communicate an unpleasant taste.

9. With care, early apples may be kept till Christmas; while many kinds may be preserved in perfection to a second year. — *Florist and Pomologist.*

TROPÆOLUM SESSILIFOLIUM, *Poepp. et Endl. Nov. Gen. et Spec. Plant.*, vol. i. p. 24, tab. 38.

T. prostratum; foliis sessilibus, 5 lobis, laciniis oblongis, glabris, glaucis, lateralibus sursum inflexis; pedunculis terminalibus, solitariis aut geminis; petalis conformibus, spathulato-obovatis emarginatis, calycem longe calcaratum superantibus. — *Poepp. et Endl., supra citat.*

Messrs. Haage & Schmidt of Erfürt have recently introduced the above-named plant, which, as they remark, is one of the fine, tuberous-rooted, climbing species found in Chili; of which those already cultivated in the gardens, by their graceful habit. the beauty and the abundance of their flowers, have become univer-

TROPÆOLUM SESSILIFOLIUM.

sal favorites, and occupy some of the highest places among the really ornamental and showy greenhouse-plants. We only need to name, in illustration of this, *T. azureum*, *brachyceras*, *speciosum*, and *tricolorum*, all well known, and inhabiting the same localities. To none of these is *T. sessilifolium* inferior, either in abundance of flowers or in richness of color. It is nevertheless quite distinct from the other species, by its leaves being inserted directly on to the stem. The calyx of the flower, of a greenish-yellow color, has five divisions, alternating with the five petals, which latter are dark red shaded with violet, and bright red towards the base. The wood-cut accompanying this notice has been copied from the work cited above.

STOKESIA CYANEA. — Allow me to call attention to this hardy plant for conservatory decoration. It flowers so late in the autumn, that, to see it in perfection, it should be grown in pots, and bloomed in-doors; otherwise the early frosts spoil its beauty. I know of nothing to compare with it at the same season for the brightness of its large blue flowers. For the information of those who may not have heard of it, I may mention that it is something like chiccory, but much more handsome.

Adulteration of Seeds. — The committee appointed by the Royal Horticultural Society, London, to investigate this question, remark in their report, that they "have had under their consideration the various modes of testing seeds which are known to them; and that which they feel inclined to recommend as on the whole the easiest, cleanliest, least troublesome, and most likely to be acceptable to the general public, is the placing of the seeds between folds of moist flannel, and keeping them in the temperature of a sitting-room or kitchen for a few days. This, of course, is not equal to Nature's own test, — actual growth in the earth. It may not answer for all seeds; but it answers perfectly for most kinds; and any seed that gives a good return under it may be depended on as certain not to give a worse result when actually sown.

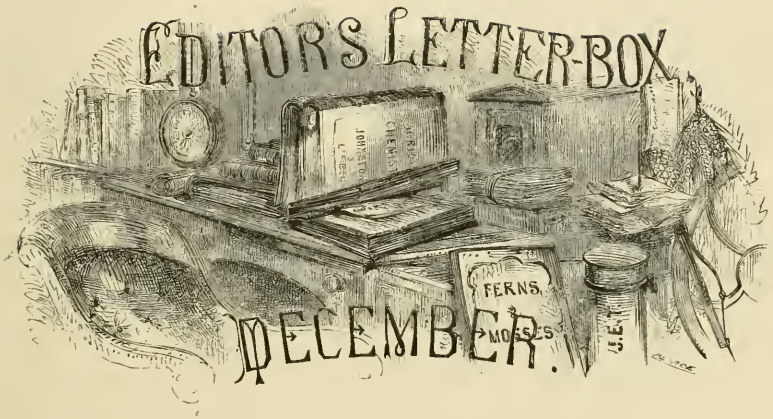
An idea of its efficiency may be gathered from a trial of it made by one of the committee upon a hundred seeds of one of the sorts whose average of good seed had in previous trials been found to be seventy-five. The simple method recommended gave twenty-five seeds germinating on the third day, twenty-three on the fourth, sixteen on the fifth, nine on the sixth, and three on the seventh; making a total of seventy-six.

The Solanums as Foliage-Plants. — Few genera of ornamental-leaved plants furnish more useful or so wonderfully-varied material for summer gardening than that of the *Solanums*. When in a young and free-growing state, many of them have a very imposing appearance. Of these a good example is presented by the *Solanum robustum*.

Of a genus so varied and so extensive, there will be found in large collections many species of comparatively little interest; but some few are indispensable for those who would attempt to carry out the fashionable and most interesting style of gardening, to which the name of sub-tropical is applied. Mr. Robinson, who writes from experience both of English and French gardens, recommends the following as being especially desirable: —

S. robustum.	S. Warscewiczii.
S. marginatum.	S. macranthum.
S. crinipes.	S. macrophyllum.
S. crinatum.	S. callicarpum.
S. hypoleucum.	S. quitoense.

Most of these plants grow freely from cuttings: as a rule, they require hothouse treatment in winter, and in summer to be planted out in light rich soil, in a warm position, with perfect shelter. *S. robustum*, with its felt of rusty hairs and the bold outline of its leaves, becomes, under such circumstances, a noble and effective plant. *M.*



THE Editors of "Tilton's Journal of Horticulture" cordially invite all interested in horticulture and pomology, in its various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed: we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

A CORRESPONDENT from Exeter, N.H., writes us as follows in relation to the use of kerosene for killing insects on plants: "In your October magazine, which has come to hand, it is stated that kerosene will kill the bugs, but will kill the plants as well. I have used it with perfect success on mealy bugs, red spiders, and green fly. Take, say, a wine-glass full of kerosene to three gallons of water, mix it up well with a garden syringe, and shower with it: a few applications

will do the job without hurting the tenderest foliage. The same applied to an ant-hill will cure them effectually."

[Our remarks were intended chiefly to apply to the use of kerosene on parlor-plants, and were in answer to a mischievous article which has been going the rounds of the papers, advising an application of kerosene to the plant with a camel's-hair brush.

We know the ill effects of this, and that many pet plants have come to grief by following this advice. We are glad to learn that kerosene can be applied safely and effectually; but would still advise its cautious use, as its effects on vegetation are deadly.]

Mount Vernon, Ind., Sept. 29, 1869.

J. E. Tilton & Co. *Dear Sirs*, — Please tell me through "The Journal of Horticulture" the names of plants to which these leaves belong. Tell me according to number, and oblige yours, &c. *C. B. G.*

P. S. — I take your valuable magazine through our news-dealers, and would not be without it for quadruple the price. I shall take your publication of "Foliage Plants" as soon as you commence publishing.

No. 1 is *Aucuba japonica*. The small leaf, No. 2, is probably *Heterocentram roseum*, — a very pretty melastomaceous plant, requiring common greenhouse-treatment. It blooms freely in winter, and is easily propagated from cuttings. There is a white-flowered variety. When next you send a plant for a name, do not select the poorest leaf. If possible, send flower; but, if you can only send a leaf, give some description of the plant.

The publication of the "Beautiful-leaved Plants" is already commenced; two numbers having been issued.

W. G. inquires as follows: "Have any attempts been made to improve and obtain varieties of the Canada Plum, which grows abundantly in our Northern States? It is not mentioned in your article on native plums, and I suppose is not identical with the Chickasaw Plum of the South. In the garden of Dr. True of Bethel, Me., I saw fine trees of the European Plum grafted upon the Canada Plum. I have also been informed that the native variety is not subject to black knot or to the attacks of the curculio."

[The Canada Plum (*Prunus Americana*) has often been used by nursery-men for stocks; but, as it does not grow so large as the common varieties of plums, it presents an unsightly appearance unless grafted at the surface of the ground. A few seedlings have been produced, varying somewhat from the original; but we know of no decided improvement, and no extended experiment to improve this species. It is more free from black warts than the common plum; but we do not know that it is less subject to the curculio. — *Ed.*]

T. G. G., Providence, R.I. — You must keep solanums warm in winter. They propagate freely from cuttings; and good stocky young plants, set out in spring in rich soil, will attain gigantic dimensions by autumn. You cannot, however, get the soil too rich for them.

L. B., Exeter, N.H. — Dipping verbenas in water of 130° to destroy rust would be rather perilous, but may be done if the plant is not allowed to remain too long in the water: it must be literally only a *dip*. Plants will bear water of a very high temperature; but the period of immersion must be regulated by the nature of the plant.

IDEM. — "Grafting a tea-rose on an oak-tree to produce a black rose" is an absurdity. The graft or bud would probably take quite as well if put upon a bottle of blacking; and, in this latter case, there would be some consistency in the result. This is like the experiment so often tried in country gardens, — of producing a blue dahlia by planting the tuber of a white variety wound round with blue sewing-silk.

W. G., Cambridge, Mass. — We do not think you can purchase magnolias budded on *acuminata* stock in the immediate vicinity of Boston; but Parsons & Co. of Flushing, L.I., or Ellwanger & Barry of Rochester, N.Y., can probably supply you. Do not, however, attempt autumn planting of magnolias: they succeed best if transplanted when in young leaf.

Lilacs grafted as you describe cannot be obtained here. Why not experiment yourself in that direction?

We never knew of *Cydonia japonica* being grafted on quince or pear; but there is no reason why it should not succeed. If, however, you wish standards, why not proceed as Mr. Parkman recommends for weigelias in our October number? The Japan quince grows freely when once established, and old plants will make shoots four to five feet long in a season.

IDEM. — We do not know of any one having seeds of the Japanese persimmon (*Diospyros*). Can any of our readers inform us?

M. J. B., Boston. — The work you ask information about is probably "Humboldt and Bonplandt's Monagraphia Melastomacearum." It was published in Paris, — *Melastomaceæ*, colored plates with letter-press, 1–60, in 1816; *Rhœxæ*, colored plates with letter-press, 1–60, in 1823.

The work is an immense folio, and very valuable; the plates being beautifully executed. There, are, however, many imperfect copies in the market, of which you describe one, as yours has only forty-five plates of *Melastoma*, and thirty of *Rhœxia;* thus wanting fifteen of the former, and thirty of the latter.

M M. M., Worcester, Mass. — *Aralia japonica* and *A. Sieboldii* are two very different plants, some nursery-men's catalogues notwithstanding. The former is much in the way of our native *A. spinosa;* but is a magnificent thing, worth a hundred of it; but, like it, is a deciduous species. The latter is evergreen, and is wholly distinct in growth and foliage. Both, however, are splendid lawn-plants. *A. japonica* is hardy with slight protection: *A. Sieboldii* requires greenhouse-protection in winter.

Ira A. Mayer. — The plant of which you send leaves and berries is *Sapindus saponaria.* It is an evergreen shrub, attaining a height of about twenty feet; native of the West Indies, and was introduced to cultivation about 1697. The flowers are green and white, followed by bunches of orange-berries, which are very ornamental. The name of the genus is an abbreviation of *Sapa Indicus* (Indian soap), in allusion to the use of the berries, which contain a strong saponaceous principle, make a strong lather, and are used for washing. The berry is, however, somewhat acrid, and in time destroys the fibre of cloth. The plant is hardly worth growing under glass; but, where hardy, is very ornamental.

Subscriber, New Haven, Conn. — Tea and Noisette roses in the border of a rose-pit should be closely pruned the last of October, when the sashes are put on the house. Moderate heat should be given as the nights become frosty; which, being gradually increased, will cause them to give plenty of flower about Christmas, when flowers are in most request.

After the bloom is out, prune moderately to start the plants again into growth, and give waterings of weak liquid-manure. This will insure plenty of bloom in March.

Prune again in spring; take off sashes, and let the plants make strong summer growth. We have found it advantageous to pinch off summer bloom. The border of a rose-pit should be made very rich with well-rotted manure; and waterings of liquid-manure should be frequently given when the plants are in full growth.

Very double roses are not as advantageous to grow as other kinds, as they seldom open well in winter. In a well-managed rose-pit, there should be plenty of bloom from December to May.

D. — The specimen of plant from Georgetown, Colorado, is the *Berberis aquifolium*, or *Mahonia*, well known in our gardens as an ornamental shrub. It was introduced here from Oregon.

R. G. — The earliest of Rogers's grapes are Massasoit (No. 3) and Lindley (No. 9).

A. M. H., Boston. — We shall soon give an article on the Solanum as a decorative plant.